

# **Community Resilience and Food Equity**

*The case for the Honolulu Hawker Centre*

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## **Abstract**

Food equity afflicts millions of people each year in the United States. Strong social and community supports that are often found near neighborhoods of better socio-economic status are nowhere to be seen in areas with significant inequalities. This has led to a pattern of poor health that leads to chronic diseases, stigmatization by peers and other mental and physiological issues that develop due to increased exposure to stress and risks. The Honolulu Hawker Centre, which this research aims to design, derives its existence out of the rebirth of the home cook as the public's main provider of nutrition. Affordable meals and the option to not choose fast-food is key to the success of the hawkers. Adopting a similar system as developed by Singapore, the centres help to bolster community resilience and provide platforms for open engagement with neighbors, friends and families.

The functions of the hawker centre include, but are not limited to, the dispersal of raw food crops, an educational facility for learning how to cultivate and cook healthy locally-grown food, and reinforce the safety of parks often avoided due to their long association with neglect, fear and crimes. The hawkers themselves become relics of their community as the food they prepare strikes close to the hearts of many who have fond memories of meals once prepared during their childhood.

The findings of the investigation reaffirmed that Hawai'i has increasingly more at stake by not supporting local agricultural businesses, not allowing decades old laws to change and not reinforcing the development of a strong culture of food production and connection to the land. The implementation of a state-wide hawker centre system would help negate the effects felt from decades of development that has seeded the conditions we feel today, especially in disadvantaged communities..

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## Introduction

The United States of America is criticized for its over consumption of goods, in which, for nationals, participation in the consumer dominated market is tantamount to participation in the American Dream. Familiar to most Americans and hopeful immigrants, it is a dream that has been likened to “a land of milk and honey with streets paved in gold.” For many, the US is perceived as a land where the poor are afforded the opportunities and resources to rise above all hindrances and participate in the fortunes of the ‘American’ economy. Yet, much of the contemporary debate contradicts the aforementioned ideals once heralded in previous years as the nation struggles to fight with even the most fundamental basis of modern society; Food.

Hawaii presents itself as paradise on earth, the pen-ultimate of tropical vacationing within the United States with world renown beaches and scenery. However, many of the disparities that exist in the resident population go unnoticed by outsiders. In a state that has recently boasted having the highest cost of living in the US, many people go hungry in an effort to make “ends meet.” Despite having one of the nation’s most extensive city bus networks, the island of Oahu still exhibits many areas of low-food access and limited nutritional value as many residents do not own a vehicle of their own. Many individuals (i.e. elderly, students, low-wage workers and families with children...) are forced to buy into low cost, low nutrient foods provided by fast food retailers or higher cost corner stores to stave off hunger.

Although government programs exist for financial assistance, the high cost of living often disqualifies many households who make more than the requirement for enrollment in such programs. Rather than approaching the issue of food equity and insecurity from a need-based assistance program (end-product), I propose that the exploration of preventative methods of programming will provide substantial benefits to communities that adopt such a method to ensure greater resilience against hunger.

The Singapore hawker centre exhibits such qualities that provide for an entire nation the promise of affordable foods that utilize local sources of labor within close proximity to most neighborhoods throughout the city-state. The meeting of community, public space, local cultures, and affordable foods which speak to the ethnic composition of Singapore can inform on the implementation of a Honolulu typology to address a number of community level issues resulting from and separate from affordable food access. The research provided within this text highlights various key factors affecting overall food inequity and present a number of architectural typologies and planning concepts for future hawker development. Addressing various issues related to the Honolulu context, how can programming and regionally appropriate modifications result in the development of a new community resource (a prototype and planning scheme) that puts aside social inequities and provides resources required to maintain a healthy life free of hunger? How can a planning resource such as a hawker center be implemented across the state, and how can the architecture be developed to ensure feasibility for both the state and center's operators? What can Hawaii offer the Singapore model to further enrich the effectiveness

of its greater social objectives and remain culturally sensitive to the needs of local Hawaii residents?

# **1 | Introduction to Food Insecurity**

## **1.1 Food Disparities in the United States of America**

Recent protests of the American 1%, highlighting the widening income gap between rich and poor Americans and partisan debate on the long overdue Affordable Care Act overshadows the issue of food equity across the US population. Current objectives by organizations and governments throughout the nation look to provide prescriptive solutions to a multifaceted issue of food-insecurity that leaves individuals of all sizes, ages and ethnic backgrounds hungry and unknowing of when their next meal may come. Grounded in a mix of income, food cost, social equity and access, prescriptive measures such as financial assistance programs which provide benefits only after need is shown only propagates the recurrence of accessing food assistance programs. Preventative measures such as raising the minimum wage may help offset some of the disparities felt within these communities, however such legislation would require arduous work at the legislative level with all parties working to achieve results in a timely manner. Yet, is there something that can be done at the ground level to begin tackling this issue without requiring a massive overhaul and increased spending on already in-place systems?

### **1.1.1 Food-Insecurity and Health**

Social inequity and access to food has been a topic of concern due to the increase of potential health risks observed especially among lower socioeconomic groups. Food insecurity is the lack of consistent access to adequate food due to economic and other

social factors that may result in hunger.<sup>1</sup> In a study published in 2014 by DD Wang and CW Leung in the American Medical Association, researchers found that “better dietary quality was associated with higher socioeconomic status, and the gap [had] widened with time[1999-2010].”<sup>2</sup> Socioeconomic status (SES), defined by levels of education and relation to the poverty income ratio (PIR: Income/\$28,960), was categorized into three groups: High SES (12 years < education, income > 3.5 PIR), Low SES (12 years ≥ education, income < 1.3 PIR), Medium SES (+/- 12 years of education, 1.3 PIR < income < 3.5 PIR).<sup>3</sup> Figure\*\*\* illustrates the growth of the gap between those with high SES to low SES by representing adherence to recommended nutritional values to avoid many food-related chronic diseases.

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<sup>1</sup> Coleman-Jensen, Alisha, William McFall and Mark Nord. *Food Insecurity in Households with Children: Prevalence, Severity, and Household Characteristics, 2010-11*, EIB-113, U.S. Department of Agriculture, Economic Research Service, May 2013.

<sup>2</sup> Wang DD, Leung CW, Li Y, et al. Trends in Dietary Quality Among Adults in the United States, 1999 Through 2010. *JAMA Intern Med.* 2014;174(10):1587-1595.  
doi:10.1001/jamainternmed.2014.3422.

<sup>3</sup> Ibid, pp 1588

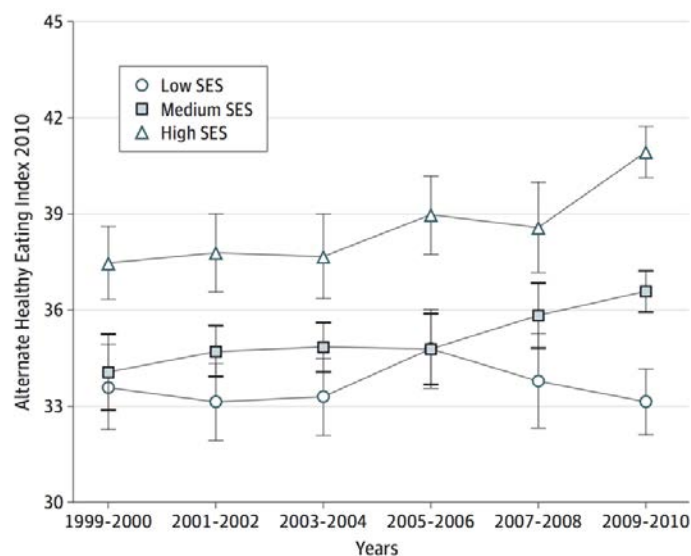


Figure 1 : Comparison of SES Levels to AHEI-2010; Wang DD, Leung CW, Li Y (2010)<sup>4</sup>

Rose and Richards attributes some of the income related disparities to limited access by low SES households because of the less likelihood of owning a car. This relates specifically to the U.S. Department of Agriculture's investigations into food deserts across the U.S. An approximate 5.7 million households in the U.S. (5.4%) live greater than one-half mile from a grocery store with limited or no access to a vehicle, with urban core areas characterized by higher racial segregation and income inequality and small town or rural areas having less transportation infrastructure.<sup>5</sup>

Andrea Freeman makes a claim that food oppression in the United States is structuralized and embedded in the food production system as well as current public assistance

<sup>4</sup> Ibid, pp 1592

<sup>5</sup> United States. Department of Agriculture. Economic Research Service. *Access to Affordable and Nutritious Food : Measuring and Understanding Food Deserts and Their Consequences : Report to Congress*. Rev. Sept. 3, 2009]. ed. Washington, D.C.]: U.S. Dept. of Agriculture, Economic Research Service, 2009.



programs.<sup>6</sup> The encouragement by food assistance programs to purchase cheaper processed foods and deals with the fast food industry rather than provide for fresh produce blurs the line between *private* and *public* realms of action.<sup>7</sup> It further encourages the concept of “personal choice” and portrays low SES people as responsible for their own food related health conditions, where advocates instead place blame on “individual moral and cultural failures” even where the absence of resources severely limits the ability to practice choice.<sup>8</sup> Successful lobbying has allowed for the subsidization of the fast food industry indirectly through corporate farming subsidies, exemptions, endorsements and deals where their low cost products are utilized in school advertising campaigns.<sup>9</sup> In 2014, McDonalds CEO Don Thompson said that “we have been marketing responsibly... we don’t put Ronald [McDonald] out in schools.”<sup>10</sup> However, the Campaign for a Commercial-Free Childhood sites numerous examples of the powerful icon Ronald McDonald advertising the ability to visit schools under “the guise of promoting everything from reading to healthy lifestyles.”<sup>11</sup> According to the regional McDonald’s website for New Jersey, the Ronald McDonald School Show Program is “geared towards students in grades Pre-K to four” and “provides fun and informative shows featuring interactive video, high-tech graphics and comical skits on a variety of educational topics.”<sup>12</sup>

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<sup>6</sup> Freeman, Andrea. "Fast Food: Oppression through Poor Nutrition." *California Law Review* 95, no. 6 (2007): 2221-259

<sup>7</sup> Ibid, pp 2222

<sup>8</sup> Ibid, pp 2223

<sup>9</sup> Ibid, pp 2223

<sup>10</sup> "This Clown Doesn't Belong in Schools." Campaign for a Commercial-Free Childhood. Accessed November 26, 2015. <http://www.commercialfreechildhood.org/action/clown-doesnt-belong-schools#three>.

<sup>11</sup> Ibid

<sup>12</sup> "Invite Ronald to Your School!" Invite Ronald to Your School. Accessed November 26, 2015. <http://www.mcnewjersey.com/3977/44028/Invite-Ronald-To-Your-School/>.



Figure 2: Ronald McDonald School Advertisement; ©2011-13 McDonalds<sup>13</sup>

While recent media has focused on the obesity epidemic in the U.S., statistics report that 65 percent of Americans are overweight, with nearly 30 percent of those being obese.<sup>14</sup> Disparities between high SES and low SES communities show that chronic health conditions are spread disproportionately across the population, especially among low-income children of any ethnicity.<sup>15</sup> Studies have shown that affordability related choices between the high cost of nutritious foods and low cost of foods low in nutritional value have attributed significantly to health disparities within food-insecure households.<sup>16</sup> Other studies have related weight gain to different coping strategies employed by individuals “during periods of food scarcity [that] may seriously disrupt metabolism and increase body fat.”<sup>17</sup> The continued cycle of over-eating during times of food abundance and restricted eating during scarcity is specifically detrimental to the health of people

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<sup>13</sup> Ibid

<sup>14</sup> CRAIG SAMS, THE LITTLE FOOD BOOK 110-11 (2004).

<sup>15</sup> B. Sherry et al., *Trends in State-Specific Prevalence of Overweight and Underweight in 2- through 4-Year-Old Children from Low-Income Families from 1989 through 2000*, 158 ARCHIVES PEDIATRIC & ADOLESCENT MED. 1116-24 (1994).

<sup>16</sup> Beaulieu, Stephen. *Current and Prospective Scope of Hunger and Food Security in America: A Review of Current Research*. Research Triangle Park, NC: RTI International Center for Health and Environmental Modeling, 2014. pp. 3-6

<sup>17</sup> Ibid. pp. 3-6

with diabetes and the development of hyper and hypoglycemia is increased and preventable strain on the healthcare system is propagated.<sup>18</sup>

### **1.1.2 Ethnicity and Race Related Food Disparities**

Race and ethnicity related disparities exist, where minority groups such as Native-Americans, African-Americans and Hispanic communities exhibit significantly more food insecurity than white, non-Hispanic communities.<sup>19</sup> Due to economic inequalities, minority groups experience higher rates of unemployment and report lower earnings than white, non-Hispanic households.<sup>20</sup> Also environmental factors may contribute to the trend as access to social resources and food retailers within ethnic communities remain low. High-poverty areas lack services such as child care, job training, substance abuse treatment centers and other similar social services which are typically located in low-poverty neighborhoods which allow for higher prices for services.<sup>21</sup> Furthermore, the limited access of healthy, quality food products is also encourages the disparities with many African-American and Hispanic communities instead relying on small local stores and convenience centers that provide limited selections with premium prices.<sup>22</sup> African-American and Hispanic communities have been shown on average to have half as much

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<sup>18</sup> Seligman HK, Schillinger D. *Hunger and socioeconomic disparities in chronic disease*. NEngl J Med. 2010 Jul 1; 363 (1): 6-9. PMID: 20592297.

<sup>19</sup> Coleman-Jensen A, Nord M, Singh A. *Household Food Security in the United States in 2012*. Economic Research Report Number 155. Washington, DC: Economic Research Service, U.S. Department of Agriculture; September 2013.

<sup>20</sup> Troy L M, Miller E A, Olson S. *Hunger and Obesity: Understanding a Food Insecurity Paradigm: Workshop Summary*. Washington, DC: The National Academies Press; 2011.

<sup>21</sup> Lin AC, Harris DR. *The Colors of Poverty: Why Racial & Ethnic Disparities Persist*. National Poverty Center, Gerald R. Ford School of Public Policy, University of Michigan. Policy Brief #16. Ann Arbor, MI: January 2009.  
[http://www.npc.umich.edu/publications/policy\\_briefs/brief16/PolicyBrief16.pdf](http://www.npc.umich.edu/publications/policy_briefs/brief16/PolicyBrief16.pdf)

<sup>22</sup> Troy L M, Miller E A, Olson S. *Hunger and Obesity: Understanding a Food Insecurity Paradigm: Workshop Summary*.

or even one-third the number of chain super markets and other mainstream food retailers than in white, non-Hispanic communities.<sup>23</sup> Figure \*\*\* highlights the large gap between Hispanic and African-American communities versus white, non-Hispanic and others on a national average.

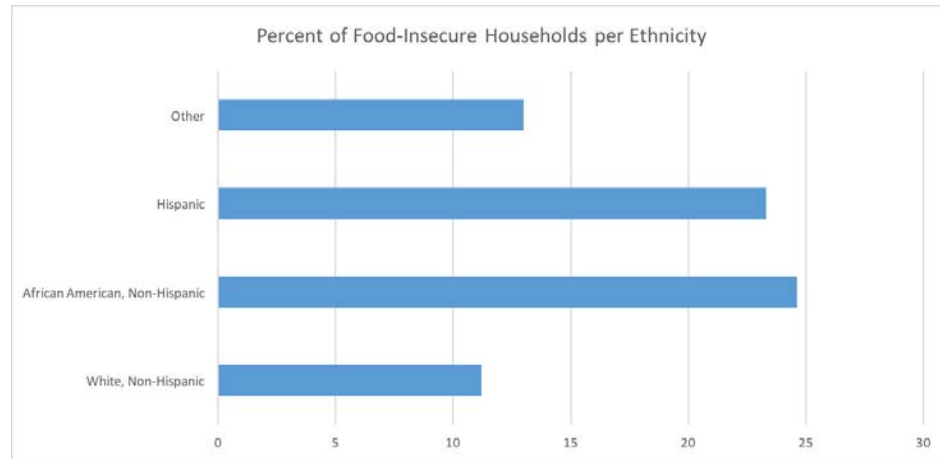


Figure 3: Food Insecurity by Race/Ethnicity<sup>24</sup>

Although, food access to raw goods may remain low due to market factors that lure food suppliers towards the suburbs, Jason Block argues that fast food restaurants target these low access and low income racially specific communities with evidence that, in some cities, there are twice as many fast food restaurants in low-income predominately African American communities than in seemingly predominately white communities.<sup>25</sup> Fast food is designed for ready availability, use or consumption and with little consideration given

<sup>23</sup> Lin AC, Harris DR. *The Colors of Poverty: Why Racial & Ethnic Disparities Persist*.

<sup>24</sup> Coleman-Jensen A, Nord M, Singh A. Household Food Security in the United States in 2012. Economic Research Report Number 155. Washington, DC: Economic Research Service, U.S. Department of Agriculture; September 2013.

<sup>25</sup> Jason P. Block et. al., *Fast Food, Race/Ethnicity, and Income: A Geographic Analysis*, 27 AM. J. PREVENTATIVE MED. 211, 214 (2004)

to quality or significance.<sup>26</sup> Advertising to racially specific groups and ages has been another factor to influence the consumption of unhealthy, low-quality food products in lieu of fresh goods and produce. Racially targeted advertisement is especially critical in the fast food market as corporations expend millions of dollars each year to appeal to the various ethnic minorities in the U.S.<sup>27</sup> **Figure \*\*\*** represents a screenshot of the webpage i-am-asian.com and linked webpage inspirasian.com where the Asian-American community is being targeted with misleading information presented in seemingly culturally specific resources that at first seem unrelated to the fast food industry.<sup>28</sup>

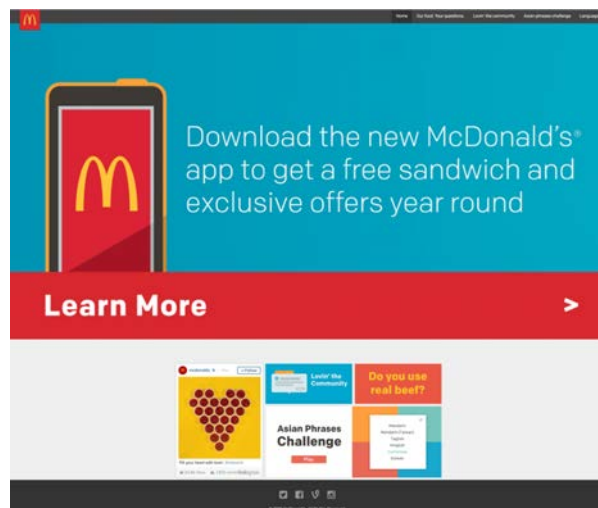


Figure 4: I-am-asian.com, ©2015 McDonald's<sup>29</sup>

### **1.1.3 Safety Nets for Low Socio-Economic Status**

The USDA reported in 2011 that 21% of households containing children were not food secure at some point throughout the year.<sup>30</sup> This means that not all of the household

<sup>26</sup> "Fast Food." Accessed November 25, 2015. [http://www.merriam-webster.com/dictionary/fast food](http://www.merriam-webster.com/dictionary/fast%20food).

<sup>27</sup> Ross D. Petty et al., *Regulating Target Marketing and Other Race-Based Advertising Practices*, 8 MICH. J. RACE & L. 335, 342 (2003).

<sup>28</sup> I-am-asian.com and inspirasian.com are property of McDonald's

<sup>29</sup> Ibid

members were able to afford access to adequate food sources to maintain an active, healthy lifestyle. Their findings proved that of those food insecure households, 75 percent included one or more adults that worked (60 percent full-time/ 15 percent part-time) and more than half of adults having obtained education beyond high school (15 percent held 4-year college degrees).<sup>31</sup> Of the low-income households (<1.85 federal poverty line) 84 percent received government assistance such as Supplemental Nutrition Assistance Program (SNAP) and Women, Infants, and Children (WIC) benefits, yet trends showed that households receiving federal assistance still showed greater rates of food-insecurity than those opting not to participate in assistance programs.<sup>32</sup> The following figure quantifies within the food-insecure demographic various factors that indicated food-insecurity for households.

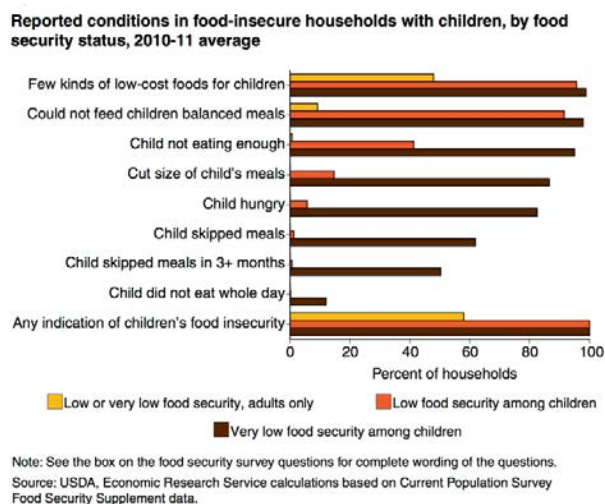


Figure 5: Food-Insecurity Indicators; USDA<sup>33</sup>

<sup>30</sup> Coleman-Jensen, Alisha, William McFall and Mark Nord. *Food Insecurity in Households With Children: Prevalence, Severity, and Household Characteristics, 2010-11*, EIB-113, U.S. Department of Agriculture, Economic Research Service, May 2013.

<sup>31</sup> Ibid, pp v

<sup>32</sup> Ibid, pp v

<sup>33</sup> Ibid, pp 7

In figure \*\*\*, the most prevalent factors affecting these households is few options for affordable food and absence of balanced diets due to said options. These inequalities in food access have been shown to be associated significantly with poorer health such as low bone mineral content, impaired development of non-cognitive abilities, iron deficiency, poor psychosocial function, depressive disorder and suicidal symptoms, anxiety, impaired learning outcomes and higher hospitalization rates among children.<sup>34</sup> The USDA reports that since food-insecurity monitoring has begun, prevalence rates have hung around historic highs, causing mixed reactions in politics regarding methods of government assistance programs. Programs such as SNAP (formerly known as the Food Stamps Program), WIC, and Free or Reduced-Price School Lunch have proven to be marginally successful in providing food security to low-income demographics with many households unable to maintain food-security with government assistance, especially households receiving disability benefits.<sup>35</sup> However, the 2010 Healthy, Hunger-Free Kids Act (HHFKA) passed by Congress allocated \$10 million to research on food-insecurity interventions and expanded the role of the USDA to allow for the opportunity to make reforms to supplemental food-security programs as needed to bolster “hunger safety nets.”<sup>36</sup>

“Safety net programs” are also referred to as transfers and are composed of multiple entitlement programs provided by the federal or state level governments with the aim of

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<sup>34</sup> Ibid, pp 39, Appendix A

<sup>35</sup> Ibid, pp 34

<sup>36</sup> "Healthy Hunger-Free Kids Act." School Meals. March 3, 2014. Accessed December 4, 2015.  
<http://www.fns.usda.gov/school-meals/healthy-hunger-free-kids-act>.

preventing vulnerable populations from falling upon further economic hardships.<sup>37</sup> Pertaining to assistance programs such as SNAP, WIC and NSLP, the bolstering by the HHFK Act in 2010 helped to expand services to previously ineligible individuals and households. However, much of the controversy around the varied amount of national success per state is the manner in which these safety nets are implemented. Although federally funded with Congressional authorization, these programs are implemented at the state level and administered by state agencies that have specific guidelines and requirements that differ from state-to-state.<sup>38</sup>

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<sup>37</sup> Beaulieu, Stephen. *Current and Prospective Scope of Hunger and Food Security in America*. 2014. pp. XI

<sup>38</sup> Ibid, pp. 4-3



## 1.2 Food-Insecurity in Hawaii

### 1.2.1 Context and Condition

The Feeding America organization reports that in 2013, 15.8 percent of the United States population was in significantly food insecure households. This is due in part to differences among all 50 states with the highest being Mississippi (22.7 percent of the population) and the lowest being North Dakota (7.8 percent). However, two states present themselves as unique case studies, as their geographic location and ethnic diversity differ greatly from the rest of the contiguous US. Under the general requirements for SNAP, acknowledgment of higher cost of living and limited resources affords the program to consider households that are at or below 200 percent the federal poverty line.<sup>39</sup>

More specifically, the ethnic diversity of Hawai‘i is also poorly represented in national surveys on food insecurity. The island state is home to an estimated 1,419,561 residents with ethnic populations substantially different than the contiguous US. Figure \*\*\* shows the ethnic diversity in state in comparison to the rest of the US population.

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<sup>39</sup> "Supplemental Nutrition Assistance Program (SNAP)." Eligibility. November 25, 2015. Accessed December 6, 2015. <http://www.fns.usda.gov/snap/eligibility>.

Ethnicity/Race	Hawaii %	US %
White Alone	26.7	77.4
African American Alone	2.5	13.2
American Indian/ Alaskan Native Alone	0.4	1.2
Asian Alone	37.5	5.4
Native Hawaiian/Pacific Islander Alone	10.0	0.2
Two or more races	23.0	2.5
Hispanic/Latino	10.1	17.4
White Alone, non hispanic	23.0	62.1

Figure 6: Ethnic makeup of Hawaii population and US; US Census Bureau 2015 data<sup>40</sup>

Hawaii Health Matters, a partnership of the Hawaii Health Data Warehouse and the Hawaii Department of Health lists Hawaii as having a 16.7 percent insecurity rate for the 2013 measurement period.<sup>41</sup> Although this rate has dropped in comparison to recent years as the economy turned for the better, the prevalence of ethnic and racial disparities has persisted, with the greatest affected community being Native Hawaiians and other Pacific Islanders. This is unfortunate considering that some reports put the pre-contact population of the Hawaiian Islands at around 1,000,000 residents. Not only is the condition similar to population estimates recorded today of all ethnicities, but the ancient Hawaiians also maintained a fully self-sufficient resource and supply system. Today, Hawai‘i is estimated to import 85-90 percent of its food, making it particularly vulnerable to natural disasters, price fluctuations and other conditions that could cripple the food-supply chain in the islands.<sup>42</sup> Furthermore the Center for Disability Studies in Hawaii (CDS Hawaii)

<sup>40</sup> "Hawaii QuickFacts from the US Census Bureau." Hawaii QuickFacts from the US Census Bureau. December 1, 2015. Accessed December 5, 2015. <http://quickfacts.census.gov/qfd/states/15000.html>.

<sup>41</sup> "Food Insecurity Among Households." Hawaii Health Matters. August 1, 2015. Accessed December 5, 2015. <http://www.hawaiihealthmatters.org/modules.php?op=modload&name=NS-Indicator&file=indicator&iid=735183>.

<sup>42</sup> *INCREASED FOOD SECURITY AND FOOD SELF-SUFFICIENCY STRATEGY*. Award Number 07 69 06658 ed. Honolulu, Hawaii: Office of Planning Department of Business Economic Development & Tourism, 2015.

explains that ancient Hawaiians were, as a population, exceptionally fit and ate a diet that some claim to be “one of the best in the world.”<sup>43</sup>

Pre-contact, the typical diet of a Native Hawaiian was simple, high in starch and fiber, and sodium and low in saturated fats. Dr. George Kanahale explains that the diets consisted of approximately 12 percent protein, 18 percent fat and 70 percent carbohydrates. Today’s typical American diet is by comparison, 15 percent protein, 40 percent saturated fat and 45 percent carbohydrates.<sup>44</sup> Since most modern Hawaiians do not have the agency to afford themselves a traditional lifestyle, health data over the previous 15 years has seen a significant rise in obesity within the Native Hawaiian community from 37 percent to 50.1 percent.<sup>45</sup> Data collected by the Food Security Supplement to the Current Population Survey reports that of total population, 35.7 percent of the Native Hawaiian population is food-insecure, more than double the percentage of white communities in food-insecure households (16.5 percent).<sup>46</sup> Figure \*\*\* illustrates the varying degree of food insecurity by ethnicity in Hawaii as of August 2015.<sup>47</sup>

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<sup>43</sup> Galloway, Lisa. "Food in Old Hawai'i." Kahana. Accessed December 10, 2015.  
<http://www.cds.hawaii.edu/kahana/downloads/curriculum/SectionII/Unit3/3.D.MeaaiaaOlaHealth/3.D.1.FoodinOldHawaii.pdf>.

<sup>44</sup> Ibid, pp. 2

<sup>45</sup> Ibid

<sup>46</sup> "Food Insecurity Among Households." Hawaii Health Matters. 2015

<sup>47</sup> Ibid

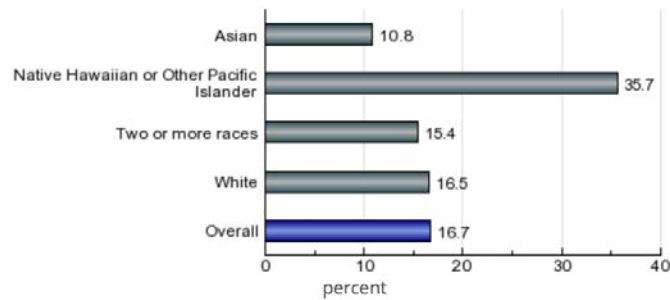


Figure 7: Food Insecurity Among Household Respondents, Hawaii Health Matters<sup>48</sup>

The Healthy People 2020 (HP2020) initiative of the US Department of Health and Human Services outlines objectives for states in their ability to reduce negative health outcomes and strengthen vulnerable communities. The target goal for Hawai‘i, as prescribed by HP2020, is to reduce the food-insecurity rate to a state-wide level of 6 percent by the year 2020.<sup>49</sup> Utilizing resources such as federal assistance programs administered at the state level and the bolstering of private charities are key to the state’s commitment to the HP2020 initiative to increase food equity. By reducing household food-insecurity, hunger decreases.

### **1.2.1 Federal Assistance Programs: SNAP, WIC, NSLP & Private**

Three major federal assistance programs dominate the food-security problem in the U.S.; SNAP, WIC and the National School Lunch Program (NSLP). These benefits are provided based on income and other qualifying conditions such as immigration status, employment and dependents. There are also countless local and state programs across the nation that are implemented in lieu of federal assistance, however, for the majority of the

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<sup>48</sup> Ibid

<sup>49</sup> Ibid

U.S. population, federal assistance remains the primary source of food security in households. Various forms of addressing food-security issues in Hawai‘i are listed below.

*SNAP – Hawai‘i Department of Human Services*

The Supplemental Nutritional Assistance Program (SNAP, formerly known as the Food Stamp Program) provides funding to low-income families that are at or below 130 percent (200 percent in Hawai‘i) the national poverty line and approved pending analysis by an intake worker and approved deductions. The eligibility requirements for SNAP vary based on monthly income, number of dependents, age, employment and immigration status.<sup>50</sup> Eligible households require that at least one adult has to be employed (if not, participation in state employment training is required) and able bodied adults without dependents must work at least part-time as SNAP benefits for unemployed individuals will last no longer than three months per 36-month period.<sup>51</sup> Participation also includes enrollment in the Electronic Benefit Transfer Program (EBT) that provides users with a debit card to access benefit funds at participating food retailers and ATMs.

In Hawai‘i the 2015 monthly participation report for 2015 (June 2014-July 2015) outlines SNAP benefits and financial assistance to individuals and households throughout the state. An average monthly expenditure of \$34,996,638 was spent on the food stamp division of SNAP to an average of 157,054 individuals (or \$222.83/month per person), a household size of 1.9 persons and financial assistance programs spending on average \$8,008,891 to

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<sup>50</sup> "Supplemental Nutrition Assistance Program (SNAP)." Eligibility. November 25, 2015. Accessed December 2, 2015. <http://www.fns.usda.gov/snap/eligibility>.

<sup>51</sup> Ibid

34,453 people (or \$232.46/month per person).<sup>52</sup> Over the course of a typical month, food stamp assistance provided by SNAP allows for a daily food allowance of approximately \$7.19 per individual.<sup>53</sup>

#### WIC- Hawai'i Department of Health

The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) established by Congress in 1972 supports pregnant, breastfeeding, or postpartum women and children under 5 years of age in obtaining nourishing supplemental foods to ensure healthy early development of children.<sup>54</sup> If eligible by being under 185 percent federal poverty line, women and families with newborn children may receive checks to purchase various prescribed nutrient rich foods such as peanut butter, milk, eggs and grains.<sup>55</sup> However, benefits may only be redeemed at participating locations. On Oahu, 73 participators, most being grocery chains (some with non-participating locations), service the various subregions of the island with concentration being in the urban core of East/West Honolulu.

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<sup>52</sup> "SNAP Monthly Participation 2015." Hawaii Department of Human Services. July 16, 2015. Accessed December 9, 2015. <http://humanservices.hawaii.gov/bessd/files/2015/08/SNAP-Monthly-Participation-2015.xls>.

<sup>53</sup> \$222.83/per person | 31 days = \$7.188

<sup>54</sup> "Women, Infants and Children." Women, Infants and Children. July 1, 2015. Accessed December 4, 2015. [http://health.hawaii.gov/wic/program\\_details/#whatis](http://health.hawaii.gov/wic/program_details/#whatis).

<sup>55</sup> "Raise a Healthy Family with WIC." Hawaii Department of Health. July 1, 2015. Accessed December 4, 2015. <http://health.hawaii.gov/wic/files/2013/04/WIC-2015-2016-RAHF-Brochure2.pdf>.

**AUTHORIZED WIC STORES**  
(as of September 18, 2015)

**OAHU VENDORS**

DECA HICKAM AFB COMMISSARY  
DECA KANE OHE BAY COMMISSARY  
DECA PEARL HARBOR COMMISSARY  
DECA SCHOFIELD BARRACKS COMMISSARY  
DON QUIJOTE (all stores)  
FOOD PANTRY (Hobron Ln & Kuhio Ave.)  
FOODLAND (all stores)  
FOODLAND FARMS AINA HAINA  
KMART (Kapolei, Salt Lake, & Waikale)   
MALAMA MARKET ( Haleiwa & Makakilo)  
NANAKULI SUPER  
PACIFIC SUPERMARKET  
SACK 'N SAVE (all stores)  
SAFEWAY (all stores)  
SHIMA'S MARKET (Times)  
TAMURA SUPER Market  
TAMURA'S (Hauula, Kalaeloa, & Wahiawa)  
TARGET ( Kapolei & Salt Lake)  
TIMES (all stores)  
WAIANAE STORE  
WALMART (Kapolei Keeaumoku & Pearl City)

*Figure 8: Participating WIC Vendors and Locations Oahu, Hawaii<sup>56</sup>*

**NSLP and related programs- Hawaii Department of Education**

Under the Department of Education (DoE), numerous programs work in tandem with the National School Lunch Program to provide nutritious and affordable food to public school children. By means of meal reimbursement, the DoE provides to schools funding for free and reduced price meals at corresponding rates. Of a total enrollment of 170,977 students in the academic year 2014-2015, a statewide eligibility rate of 55.9 percent were eligible for free or reduced lunch (71,649 free lunches, 18,235 reduced lunches and 81,093 paid lunches).<sup>57</sup> In order to qualify, households must earn an income at or below the levels indicated in Figure \*\*\*.

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<sup>56</sup> "Authorized WIC Vendor List." Vendor List. September 18, 2015. Accessed December 4, 2015. <http://health.hawaii.gov/wic/files/2013/05/Vendor-List-3.pdf>.

<sup>57</sup> "October Data 2015 (SY 14-15) Report." Hawaii Child Nutrition Programs. March 17, 2015. Accessed December 4, 2015. <http://hcnp.hawaii.gov/wp-content/uploads/2013/09/NSLP008-October-Data-Report.pdf>.

Income Chart					
EFFECTIVE DATE: JULY 1, 2015 TO JUNE 30, 2016					
Family Size	Yearly	Monthly	Twice per Month	Every Two Weeks	Weekly
1	25,068	2,089	1,045	965	483
2	33,911	2,826	1,413	1,305	653
3	42,754	3,563	1,782	1,645	823
4	51,597	4,300	2,150	1,985	993
5	60,440	5,037	2,519	2,325	1,163
6	69,283	5,774	2,887	2,665	1,333
7	78,126	6,511	3,256	3,005	1,503
8	86,969	7,248	3,624	3,345	1,673
For each additional household member add:	+8,843	+737	+369	+341	+171

Figure 9: NSLP Hawaii Income Requirements<sup>58</sup>

For each student, the USDA provides to the DoE prescribed amounts in relation to percentage of qualified served students. Breakfast programs for schools under 40 percent free and reduced lunches receive \$1.94 per free student, \$1.64 per reduced student, and \$0.33 for each paid meal. If enrollment in the program exceeds 40 percent then the DoE receives \$2.32 for free students, \$2.02 for reduced students, and \$0.33 for paid students. Under the lunch reimbursement scheme, schools under 60 percent NSLP enrollment receive \$3.60 for free students, \$3.20 for reduced students and \$0.34 for paid meals. If over 60 percent enrollment in NSLP, the rates increase by \$0.02.<sup>59</sup> If a school year is 180 days in length, within the restraints of the best case scenario according to recent Hawai'i student enrollment data, the USDA spends yearly approximately \$35,219,727 on

<sup>58</sup> "Hawaii DOE | Free and Reduced Price Lunch Program." Hawaii DOE | Free and Reduced Price Lunch Program. June 1, 2015. Accessed December 4, 2015. <http://www.hawaiipublicschools.org/TeachingAndLearning/HealthAndNutrition/StudentHealthResources/Pages/FreeReducedLunch.aspx>.

<sup>59</sup> "2015-2016 School Program Reimbursement Rates." Hawaii Child Nutrition Programs. Accessed December 9, 2015. <http://hcnp.hawaii.gov/wp-content/uploads/2015/07/2015-2016-School-Programs-Reimbursement-Rates.docx>.



subsidized school breakfasts and \$61,894,803.60 on subsidized school lunches for students in low-income households.<sup>60</sup>

### *Other Charities and Affordable Food Suppliers*

There are numerous private funds and charities throughout Hawai‘i that provide food assistance to different populations. Many of these programs are faith based food pantry charities that have individual rules and allotments per location. Some require registration and others need only identification, however, these services primarily work on donations to supply and purchase food stock. The Hawaii Food Bank, part of the United Way charity, is a more widely utilized resource of nourishment for people and families in need. It not only aids in supplying over 200 member agencies, but also manages and disburses warehouses and food stock throughout the state.<sup>61</sup> The Hawaii Food Bank claims that it is currently providing assistance to more than 123,000 households, or roughly 287,000 people including 47,894 children and 46,000 elderly.<sup>62</sup>

### **1.2.3 Expansion of Programs**

The Food Research and Action Council (FRAC) acts as a legislative watchdog for the U.S. with the goal of ensuring food equity through proposed legislation and focused studies of government programs aimed at tackling food-insecurity in the U.S. Among

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<sup>60</sup> Breakfast: 180 days (71,649 free students (\$1.94) + 18,235 reduced students (\$1.64) + 81,093 paid students (\$0.33)) = \$35,219,727

Lunch: 180 days (71,649 free students (\$3.60) + 18,235 reduced students (\$3.20) + 81,093 paid students (\$0.34)) = \$61,894,803.60

<sup>61</sup> "HawaiiFoodbank.org - Home." HawaiiFoodbank.org - Home. Accessed December 9, 2015.  
<http://www.hawaiifoodbank.org/Home.aspx>.

<sup>62</sup> "HawaiiFoodbank.org - Learn More." HawaiiFoodbank.org - Learn More. Accessed December 9, 2015.  
<http://www.hawaiifoodbank.org/LearnMore.aspx>.

their most recent studies, FRAC released a report which critiqued the success of the Obama-Biden plan to tackle domestic hunger by 2015 and provided a list of recommendations that would re-strategize the Obama Administration's plan of action for broader success by 2020. The organization hails the strategies undertaken thus far since the advent of the 2008 recession that president Obama inherited from his predecessor, however they exclaim that the continued low employment and recovery of wages for the bottom 20 percent of Americans (presently 10 percent lower than levels in 2005), austere government fiscal policies and inadequate government supports for struggling families has continued the prevalence of hunger in the US.<sup>63</sup> The Expansion of SNAP and various tax credits such as the Child Tax Credit and Earned Income Tax Credit provided much needed assistance to qualifying families. In Hawaii, since the expansion of SNAP under President Obama's 2009 Stimulus plan, enrollment of individuals in the federal food assistance program has more than doubled (2009: avg. 73,147 pax/mon, 2015: avg. 157,054 pax/mon).<sup>64</sup>

However, the national non-profit organization Feeding America (affiliated with Hawaii Food Bank and United Way) reports in a national county-level dataset for 2011-2013 that in Hawai'i an estimated 193,940 people are in food-insecure households, or 13.8 percent of the total population.<sup>65</sup> In Figure \*\*\* the participation of individuals in the previously mentioned programs have been compared against each other for fiscal year 2015, where

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<sup>63</sup> "A Plan to End Hunger in America." Food Research and Action Council. October 1, 2015. Accessed November 16, 2015. <http://frac.org/pdf/plan-to-end-hunger-in-america.pdf>. pp. 4-5

<sup>64</sup> Data from Hawaii Department of Human Services: FY 2009 and FY 2015. <http://humanservices.hawaii.gov/bessd/snap/>

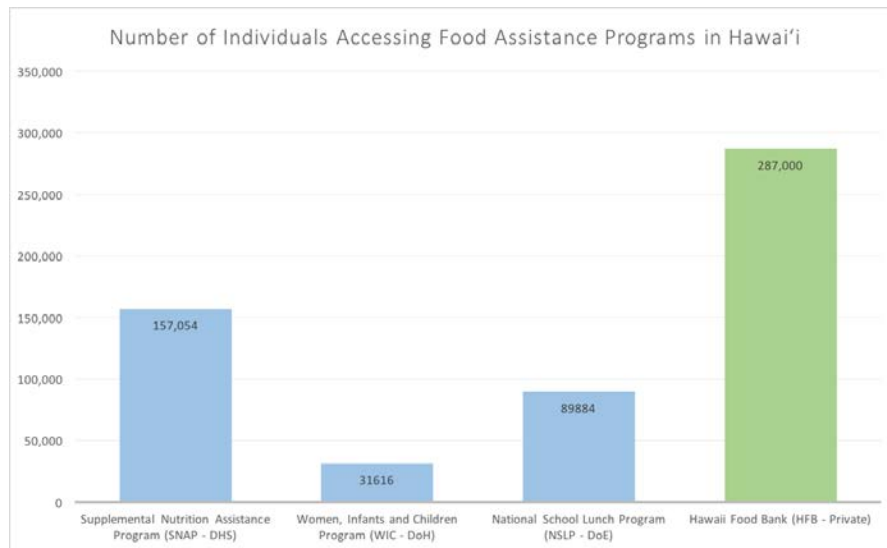
<sup>65</sup> "Map the Meal Gap." Feeding America. Accessed December 7, 2015. <http://map.feedingamerica.org/county/2013/overall/hawaii>.

individuals enrolled in any program may or may not participate in others depending on social pressures, income eligibility, accessibility and other non-specified factors. In the data, the Hawaii Food Bank reported that approximately 21% of the population of the state (287,000) accessed the food assistance services of the charity's food pantries at some point in the year. This is almost twice as many individuals enrolled in the SNAP program which relies on income based qualifications for eligibility. Feeding America also reports that, of individuals in food-insecure households, 48 percent of people were not eligible in 2011 to receive SNAP or other federal nutrition benefits due to exceeding income related requirements.<sup>66</sup> In a national analysis of the food-insecurity issue as reported by the USDA, the enrollment in SNAP benefits of food-insecure households rose steadily since 2006 when only 39 percent of households received SNAP. However, their findings suggested that of households receiving assistance, greater food-insecurity was observed and persisted in comparison to households not participating in assistance programs.<sup>67</sup>

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<sup>66</sup> Ibid: This is a 2011 statistic that utilized a SNAP enrollment figure from 2010 of 96,535 individuals. Today the number may vary as enrollment has increased significantly due to the expansion of SNAP under the 2009 Stimulus.

<sup>67</sup> Coleman-Jensen, Alisha, William McFall and Mark Nord. *Food Insecurity in Households with Children: Prevalence, Severity, and Household Characteristics*. pp. 34



	Hawaii Total Population	Supplemental Nutrition Assistance Program (SNAP - DHS)	Women, Infants and Children Program (WIC - DoH)	National School Lunch Program (NSLP - DoE)	Hawaii Food Bank (HFB - Private)
Total Pax	1360301	157,054	31616	89884	287,000
Percent of State	100.00%	11.55%	2.32%	6.61%	21.10%
Notes		*Income Based Adjusted to 200% FPL (HI,AL) (27010/1pax)	*Income Based 185% FPL HI (25,068/1pax)	*Income Based 185% FPL HI (25,068/1pax) <18 years only	*Emergency Assistance Case evaluation

Figure 10: Comparison of Government Assistance to Private Charity in Hawaii per Population Served<sup>68</sup>

Although enrollment has been made easier due to fundamental policy changes, there still exists a substantial portion of the population that is unable or not participating in food assistance programs. The FRAC, although commemorating the efforts and successes thus far of the Obama-Biden mission to address food-insecurity in the US, has provided in its most recent report a list of recommendations to reach the Healthy People 2020 goal of reducing hunger domestically. The report identifies eight categories of improvement to achieve greater food-security in the coming years. The list is as follows,<sup>69</sup>

1. Create Jobs, raise wages, increase opportunity and share prosperity

<sup>68</sup> Author created and compiled from data collected from each agencies' database

<sup>69</sup> "A Plan to End Hunger in America." Food Research and Action Council. pp. 10-26

- a. Uneven distribution of growth shows a poverty rate of 12.5% in 2007 and 14.8% in 2014
  - b. Increase in minimum wages and creation of public and private jobs
- 2. Improve government income-support programs for struggling families
- 3. Strengthen SNAP
  - a. Allow access to mainstream commercial food outlets
  - b. Realignment of SNAP benefit levels to the US Low-Cost Food Budget rather than the Thrifty-Food Plan which typically provides up to two-thirds or four-fifths of a month's diet
  - c. Allow for housing cost deductions past the current caps
  - d. Remove other arbitrary bars to eligibility such as immigration status and banning of drug felons
- 4. Strengthen Child Nutrition Programs
  - a. Remove arbitrary bars for the NSLP and other community eligibility programs
  - b. Transportation grants for rural areas and low-access areas
- 5. Target supports to especially vulnerable populations
- 6. Work with states, localities and non-profits to expand and improve participation in federal nutrition programs
  - a. Expand outreach and education programs
  - b. Remove state specific barriers to programs
  - c. Buttress supports for emergency food programs
- 7. Make sure all families have convenient access to reasonably priced, healthy food
  - a. Lack of access often forces families to purchase above-average prices for unhealthy food
  - b. Implementing Community Garden, Farmers' Markets, Greencarts and improving corner store offerings (low-impact)
  - c. Get resources located in communities and incorporate all qualified resources under SNAP and WIC programs to increase access and eventually purchasing power (high-impact)
- 8. Build political will
  - a. Empowering communities locally and removing contemptuous and racially directed statements concerning food assistance programs and false claims of program "fraud"

### **1.3 Ending Hunger in Hawaii: A Preventative Approach in Singapore**

Government assistance programs have alleviated the burden of food-insecurity from a large portion of the United States population and stemmed the furthering of economic hardships and health disparities created by continued food-insecurity. These measures can be described as necessary, but not sufficient in being able to mitigate the issue of hunger in Hawaii. In reference to figure 68, the percentage of the population needing to access the services of the Hawaii Food Bank greatly exceeded the number of SNAP recipients and total estimated individuals in households reporting food-insecurity. Under the recommendations provided by FRAC, most solutions were prescriptive to the greater issue, with expansions going to programs that treat the various side effects of food insecurity such as healthcare, low-income financial assistance and charity handouts. Preventative measures, although requiring initial investments, have the opportunity to reduce the strain already being placed on the various assistance systems already in place.

Preventative measures in the FRAC report include the reinforcement of the workforce and increased wages as well as expanded access to various sources of food suppliers that can offer affordable goods to low access communities. However, the report also explains that agencies need to target specific populations when attempting to reach out and assist food-insecure households. This model works to elevate the base operating level of a population in relation to the targeted disparity, promoting a model of exclusion and discrimination as the disparity gap is narrowed with no benefit becoming to those barely

making by in the middle.<sup>70</sup> An example of such a model is the qualification requirements for SNAP and other government assistance programs based on income, whereas households earning slightly over the cut-off, but still unable to afford basic goods and services, is unable to obtain much needed assistance. The expansion of Medicaid under the Affordable Care Act is an example of the government attempting to narrow the disparity gap between households that cannot afford private insurance and those who can, leading to the current debate as how to better incorporate this new vulnerable population into the greater scheme of the ACA.

In the 50 years since Independence, Singapore has set the bar for many social and societal issues, utilizing sweeping and final legislation to resolve fundamental problems associated with dense urban living. Singapore's approach to tackling fundamental inequities has historically been through a total population approach, where the baseline operating capacity of populations in relation to the issue at hand is raised to further protect the population as a whole (i.e. wage raises, reduction of overall pollutants, complete street implementation...). The development of hawker centres throughout the island nation has often been cited as serving a dual purpose; providing much needed employment to an elastic labor-force in times of both good and bad economic growth, and feeding a nation healthy and safe foods.<sup>71</sup> The careful integration of hawker centers in urban planning, communal sharing of services, and efficient design of space and operation allows for a reduction in cost many brick-and-mortar restaurants are unable to afford. These savings are then passed on to the consumer, where meals may cost as low

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<sup>70</sup> Frohlich, Katherine L, and Louise Potvin. "Transcending the Known in Public Health Practice: The Inequality Paradox: The Population Approach and Vulnerable Populations." *American Journal of Public Health* 98, no. 2 (2008): 216-21. pp. 218

<sup>71</sup> A common reference made by late first Prime Minister Lee Kuan Yew of the People Action Party of Singapore.

as \$1.70 at some stalls. This does not however exempt Singapore from the burdens of food-insecurity.

Singapore was recently rated by the BBC as the most expensive city to live in 2014 and 2015, with Paris, Oslo, Zurich and Sydney falling closely behind.<sup>72</sup> The Community Food Survey conducted by Food for All, a local activist group for food security in the city-state, reported that approximately 12,000 households in Singapore rely on supplementary food rations.<sup>73</sup> Taking in account that the average household size is 3.3 persons in Singapore, that figure amounts to 39,600 persons in need of assistance, or .7 percent of the total population of 5.54 million citizens (nearly 4 times the population of Hawai‘i).<sup>74</sup> Similarly, Singapore imports 90 percent of its food products from neighboring countries and suppliers due to limited agricultural land on the island nation, this makes the island especially vulnerable to price fluctuations and shortages should interference with the import occur such as weather and supply-demand factors.

As a case-study, the hawker centre model developed by Singapore can shed light on a new method of prevention in the fight against food-insecurity in Hawai‘i. Both states have similar costs of living, climates, ethnic diversity strongly associated with East and South East Asia and historical ties to the geographic “West.” Given the recent

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<sup>72</sup> "Singapore Remains World's Most Expensive City - BBC News." BBC News. March 2, 2015. Accessed December 10, 2015. <http://www.bbc.com/news/business-31689124>.

<sup>73</sup> "Is Singapore Hungry? – A Project Perk Discussion – the Kent Ridge Common." The Kent Ridge Common. September 24, 2009. Accessed December 10, 2015. <http://kentridgecommon.com/is-singapore-hungry-a-project-perk-discussion/#sthash.WFUm9Ukn.dpbs>. Article Author is from the National University of Singapore

<sup>74</sup> "AVA Vision | AVA Unveils Updated Food Security Roadmap." AVA Vision | AVA Unveils Updated Food Security Roadmap. October 1, 2013. Accessed December 10, 2015. [http://www.ava.gov.sg/files/avavision/issues3-4\\_2013/food-security-roadmap.html](http://www.ava.gov.sg/files/avavision/issues3-4_2013/food-security-roadmap.html).



development plans currently being executed and Transit Oriented Development in response to the eventual greater access to public transportation via the Honolulu Area Rapid Transit (HART), the opportunity to implement and revitalize communities by providing a new typology of social space that affords to lower SES populations employment as entrepreneurs working together to stave off hunger may provide the state of Hawai'i much needed leverage in achieving the HP2020 goal. The affordability of food, propagated by the communal atmosphere encouraged by the hawker centre business model and special programming could not only benefit populations of low-income households, but also provide a unique dining experience that responds appropriately to the diversity within surrounding communities and encourages participation by all. Singapore's hawker centres are frequented not only by patrons who cannot afford to go to dine-in restaurants, but commonly by working professionals and social elites. According to the Singapore Department of Statistics Monthly Expenditure Report in 2012/2013, the average expenditure per household on hawker centre food as a total source of nourishment was 37 percent with higher SES incomes participating less and lower SES incomes with heavier reliance. Of all "eating out" service expenditures, an average household would spend 58 percent of their expenses at hawker centres rather than restaurants. Lower SES populations reported a frequency of 80 percent versus higher SES populations citing 38 percent.<sup>75</sup> These spaces have become engrained into the daily function of how the average Singaporean lives their life, creating a crossroad of culture and community, reinforcing the true meaning of "public space."

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<sup>75</sup> Singapore Department of Statistics, "Report on the household expenditure survey 2012/2013", <http://www.singstat.gov.sg/publications/household-expenditure-survey>

## 2 | The Singapore Hawker Centre

Notes:

1. For the purpose of consistency with proper nouns, sources, and language utilization, I will utilize the British/World English designation for the word “**centre**” and various other terms throughout this chapter.
2. The use of metric and imperial measurement standards will be used interchangeably on a case-to-case basis as per source.

Singapore is world renown for shipping, economics, and city planning. Having developed from an economically depressed post-colonial city-state torn by cultural rifts and conflicts with neighboring nations, Singapore has transformed itself into a beacon of economic trade in under 50 years. Having no natural resources of its own, serving as an importing stopping point for ships traveling through the Straits of Malacca, late Prime Minister Lee Kuan Yew’s People’s Action Party asserts that Singapore’s greatest asset is its people.<sup>76</sup> In the 50 years since independence, of great concern to the government is how many groups of fairly recent immigrants with little in common can be brought together and help to build a better society in which to live in.

Many social reforms have worked together to create a thriving community that has allowed many people to thrive knowing that basic needs of life are within arms reach throughout the city-state.<sup>77</sup> Programs such as those provided by the Housing Development Board have provided public housing benefits to families, allowing the rate of homeownership in the country to skyrocket to nearly 90%.<sup>78</sup> Although much of the benefits are reserved for those who are citizens and residents of the communities, one

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<sup>76</sup> Cite

<sup>77</sup> Cite

<sup>78</sup> Cite

such project that anybody can participate in is in any number of hawker centres spread throughout the various districts of the country.

## **2.1 Development of the Hawker System**

To learn what a Hawker Centre is in its entirety, one must understand the term “*hawker*.” Derived from Low German and English, the word *hawker* denotes a person who travels around selling goods, typically by shouting.<sup>79</sup> Seen by many as an occupation petty in scale, its economic rationale and opportunities proved successful in upward social mobility and wealth.<sup>80</sup>

### **2.1.1 19<sup>th</sup> century - 1950**

The history of *hawkers*, or *hawking* can be traced to the mid 19<sup>th</sup> century as British colonialists arrived and set up business in the strategic fishing village that once occupied the Singapore Island pre-contact. As the bustling port-city grew under British sovereignty, itinerant street hawking grew alongside the economic success of the strategic port-city.<sup>81</sup> Being associated with the vast colonial empire once controlled by Britain, migrants predominately from southern China, India, and the Malay archipelago quickly added to the population. The influx of immigrants and high unemployment rates fed into the hawking practice, as early hawkers began setting up professional groups and networks. Primarily relying on ethnically similar groups defined at first by the use of various dialects and various secret societies, communication and competition between

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<sup>79</sup> *Oxford English Dictionary*. 2<sup>nd</sup> ed. Oxford: Oxford University Press, 1989. “Hawker”

<sup>80</sup> Yeo, Katherine Lian Bee, Hawkers and the State in Colonial Singapore: Mid- Nineteenth Century to 1939, 1989, pp. 2.

<sup>81</sup> IPS citation

groups led to the organized formation of hawking zones and partnerships, reflecting the ethnic majority of sub districts throughout Singapore.<sup>82</sup> The exclusive membership structure, especially the inclusion in secret societies brought about a number of benefits for member, such as protection and economic resources, but inevitably the increasingly competitive market led to more antagonism from rival groups.<sup>83</sup>

The colonial authorities, who were concerned with losing their grip on the hawking businesses and regulations, began interfering in the business operations of many groups, sparking the first of many clashes and riots.<sup>84</sup> The first began on the 29<sup>th</sup> of October 1872 with continued tense relations until the beginning of the “Verandah Riots” on 20-22<sup>nd</sup> February 1888.<sup>85</sup> The riots contested the use of verandahs which provided a continuous protected thoroughway in front of storefronts and under colonial shophouses. Part of colonial regulation, the verandahs were reserved for the clear passing through of pedestrians and provided as public space “strictly and continually kept open for free flowing pedestrian traffic.”<sup>86</sup> Conflicting with this law, the rapid proliferation of hawking posed problems to traffic, sanitation, health, and administrative authorities sparked the colonial governments eventual crackdown of illegal operations.<sup>87</sup>

Two key pieces of legislation passed during this era of tension gave local authorities more agency in overseeing the practices of hawking and integrate the practice directly

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<sup>82</sup> Yeo, 1989, pp. 15.

<sup>83</sup> Tzen, Lim Yung, Social Memory and Street Hawking in Singapore, 2006, pp. 43.

<sup>84</sup> Yeo, 1989, pp. 80.

<sup>85</sup> Yeoh, Brenda S.A., Contesting Space: Power Relations and the Urban Built Environment in Colonial Singapore, 1996, pp. 245.

<sup>86</sup> Ibid, pp. 246.

<sup>87</sup> Ibid, pp. 250.

into proper legislative and judicial frameworks. The Peddler's Act of 1871 and Hawkers Act of 1888 became models for the British colonial government to create new legislation.<sup>88</sup> The legislation created consisted of two main points: 1) Hawkers who operated stalls without proper consent could be fined (2) People could not choose to be hawkers at their whim.<sup>89</sup> Further action, as the 20<sup>th</sup> century began nearing, focused the attention of the authorities on street hawkers who consciously invaded public spaces, polluted, spread disease and guilty of trying to suborn officials, services, and secret societies.<sup>90</sup>

In 1898, authorities posted notices decreeing that all hawkers limit the business and wares in portable baskets and not remain sedentary as to keep the streets free of congestion.<sup>91</sup> Highly unsuccessful due to low literacy rates of immigrants in the colony, amendments to the Municipal Ordinance conceded to the industry and gave power to authorities to designate specified public places and charge fees for the right to sell along the designated area.<sup>92</sup> This marked a turning point in hawker regulation, allowing greater oversight and control by dictating the locations and distribution of hawking boundaries and fixed pitched hawkers. Furthermore, the assessment of fees allowed for greater oversight of the fixed pitched operators, as their business operations came under the "administrative realm" with typical transactions and business dealings being recorded and kept.<sup>93</sup>

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<sup>88</sup> Yeo, 1989, pp. 96.

<sup>89</sup> Ibid, pp. 96.

<sup>90</sup> Tzen, 2006, pp. 45.

<sup>91</sup> Yeo, 1989, pp. 84.

<sup>92</sup> Yeoh, 1996, pp. 262.

<sup>93</sup> Tzen, 2006, pp. 46.

Itinerant hawkers remained at large, as current legislation did not cover the vast majority of their dealings, even though their activities were large contributors to pollution and unsanitary conditions.<sup>94</sup> The year 1919 marked a significant milestone where colonial authorities enacted numerous by-laws that worked to bring itinerant hawkers under regulation. These laws enacted actions that required these hawkers to be licensed, operate only within stipulated zones and times (05:00-15:00) and prohibited the act of hawking in front of established eating establishments.<sup>95</sup> It is within these laws that the prototype for modern hawker centres can be seen forming, where the establishment and relocation of itinerant hawkers to hawker shelters worked to centralize and impose regulation of a previously rouge industry. Six shelters were opened in the 1920's in major neighborhoods.<sup>96</sup> This initial form of regulation was widely ineffective as the hawking population proliferated and activities persisted outside of the legal bounds and wreaked havoc on public spaces with congestion and pollution in streets and verandahs.

In 1931, a committee was created to readdress the numerous piecemeal legislative actions previously established, marking a milestone in the attempt to reconcile issues concerning the authorities and the public.<sup>97</sup> Recommendations of the committee concluded that the total abolition of the hawker industry would be counter productive, as it served an important role in being able to provide affordable meals to a growing population. However, the report advocated for the reduction of the 12,000 registered hawkers and

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<sup>94</sup> Ibid, pp. 46.

<sup>95</sup> Yeoh, 1996, pp. 264.

<sup>96</sup> Ibid, pp. 265-266.

<sup>97</sup> Tzen, 2006, pp. 46.

suppression of all street hawking.<sup>98</sup> This was to be achieved by the establishment of cooked food shelters in congested areas in town and prohibition of street hawking in neighboring streets. The reduction of hawkers to a “minimum necessary” was also mentioned as being difficult to assess without prior knowledge of the profession and needs of the population and community.<sup>99</sup> Failure to abide by the law would be punishable by revoking licensure and appearing before court the very next day.

The report of 1931 has been criticized as being counter-productive in that it lacked an understanding of hawking and its array of services. Awarding the authorities with an iron fist, tensions rose as worsening economic situations led to an increase in illegal hawking. The aftermath of Japanese occupation and WWII swelled the hawking population to almost 20,000 by 1950.<sup>100</sup>

### **2.1.2 Decolonization 1950 – 1960's**

After nearly 20 years of conflict between the authorities and illegal hawkers, with the former working to build public resentment of the latter and the latter figuring ways to negate the law, the 1950 Hawkers Inquiry Commission released a new report. The report analyzed the situation taking into account the deteriorating relationship between officials and hawkers, as well as critically assessed the extent and effect of previous and current

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<sup>98</sup> Report of the Committee Appointed to Investigate the Hawker Question in Singapore, Singapore, 1931, pp. 3.

<sup>99</sup> Ibid, pp. 5.

<sup>100</sup> Chia, C.F., The Place of the Hawker in the Community, Department of Social Work, University of Malaya, 1954, pp. 48-50

hawker policy, even reversing much of the 1931 report.<sup>101</sup> In it the report recommends that there should be no limit to the number of hawkers,<sup>102</sup> and instead focused attention on the legality of each hawker and their adherence to the rules and regulations. These rules would then be enforceable<sup>103</sup>, with unlicensed hawkers susceptible to confiscation and destruction of goods if found in violation of the law.<sup>104</sup> This allowed certain protections to hawkers who held licenses from being seized and unlawfully mistreated.

One of the more intriguing aspects of the report however was the recommendation to form a Permanent Advisory Board that works in tandem with a Hawkers Court to approach and solve issues related to every aspect of hawking. This included a democratically elected hawker to serve as liaison for licensed hawkers to provide expertise on problems and policies afflicting the hawker community. The establishment of a whole new department allowed for a ground up approach on restructuring oversight methods. The Report established a new category of enforcement officials called Hawker Inspectors who not only enforced but acted as mediator and each overseeing 2000-3000 licensed hawkers.<sup>105</sup> It was also their duty to “win the respect”<sup>106</sup> of the hawkers they oversaw, as corruption, neglect, and abuse of the law ran rampant with prior enforcement officials.

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<sup>101</sup> Report of the Hawker Inquiry Commission, 1950, Printed at the Government Printing Office Singapore by F.R. Vine, Acting Government Printer 1950, pp. 7.

<sup>102</sup> *Ibid*, pp. 7.

<sup>103</sup> *Ibid*, pp. 16.

<sup>104</sup> *Ibid*, pp. 20.

<sup>105</sup> *Ibid*, pp. 19.

<sup>106</sup> *Ibid*, pp. 19.



The Report also laid out plans to address fundamental issues regarding operations of licensed hawkers. Of primary concern were cooked food hawkers and their inspection by the Municipal Health Officers, who complained of the lack of records and hygiene related to the hawker business.<sup>107</sup> In a first attempt to maintain order with a classificatory system, signs identifying compliance with regulation by using colored boards with symbols ensured to not just officials but also the public that health requirements were met.<sup>108</sup> This report also included a unique recommendation that not only is the Hawker held liable in the failure to maintain health standards, but the buyer was also liable to prosecution. That is, that the act of purchasing from the hawker who is failing to meet requirements is, in effect, encouraging and perpetuating the unsanitary problem.<sup>109</sup> A buyer who stops a hawker to purchase in the middle of a street is also held liable for obstructing traffic with even graver consequences for those that obstruct traffic within forbidden hawking areas.<sup>110</sup> This put onto the citizens themselves the responsibility of maintaining and encouraging a legally regulated system and discouraged the support of and perpetration of illegal businesses and practices.

The Report argues also that hawkers brought a good competitive edge to the retailing industry, over-ruling complaints from shopkeepers and established eateries that cited unfair competition. The Report states, “the competition of hawkers has a beneficial effect on prices, and for this reason is not prepared to recommend their exclusion.”<sup>111</sup> Included in their final draft was a series of letters from P.E. Sofeldt from Mansfield & Co wrote to

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<sup>107</sup> Ibid, pp. 13.

<sup>108</sup> Ibid, pp. 32.

<sup>109</sup> Ibid, pp. 17.

<sup>110</sup> Ibid, pp. 17.

<sup>111</sup> Ibid, pp. 11.

the Secretary of the 1950 Hawkers Inquiry Commission, where he voiced in support of the hawker situation. In his writings, he described that hawkers are able to reduce the cost of living for the everyday working class person, providing “not only for their midday meal but for all their meals.”<sup>112</sup> He continued to consider that if hawker numbers were to be diminished, it would be “folly” when most of the populace found it difficult to afford even the “bare necessities of food and drink.”<sup>113</sup>

Relations between the government authorities and hawkers grew throughout the 1950’s with emphasis on procuring licensure, rooting out corruption, and enhancing public safety and wellbeing. However, the 1960’s saw little discussion on the topic of hawkers due to the governments attention to more pressing economic, social, and political stability. In 1963 Singapore gained the right to decolonize and join the Federation of Malaysia, then in 1965 Singapore separated from the federation to form the Republic of Singapore.<sup>114</sup> Under the leadership of Lee Kuan Yew (LKY), who presided as Prime Minister from colonial autonomy in 1959 until resignation in 1990 after 25 years of independence, the ruling People’s Action Party (PAP) began to revisit the previous reports made on the hawker problem. The Registration and Licensing Division was created in 1968 and throughout the next two years, implemented an island wide effort to reach out to unlicensed hawkers and properly register their businesses. Completed in 1973, the agency’s aim to “identify, control and contain”<sup>115</sup> the numbers of hawkers and the practices of their businesses were achieved, having been placed on hold briefly due to

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<sup>112</sup> Ibid, Appendix A(i).

<sup>113</sup> Ibid, Appendix A(viii) Letter 1.

<sup>114</sup> Vasil, Raj, Governing Singapore: A History of National Development and Democracy, Singapore: Allen & Unwin, 2000, pp. 2-3

<sup>115</sup> Ministry of Environment, Annual Report, Singapore: 1972

a cholera outbreak in the late 60's early 70's.<sup>116</sup> New licensing laws were put into effect that made licensure conditional and available to only those who met the stringent requirements.

In line with the PAP's political ideology, all hawkers were required to be Singaporean citizens or permanent residents, thus reserving the jobs for Singapore's "own people."<sup>117</sup> Also at a critical time of extreme economic development, age restrictions were placed at above 40, as to encourage the growth of other industries throughout the island nation. The restrictions further prohibited singles, property owners, and retirees (whom were believed to be able to live off the existing pensioner plan).<sup>118</sup> A particular change to the licensure requirements involved cases where a stall that sold a particular product would be denied if there were too many existing stalls selling the same thing in a particular locality.<sup>119</sup> The state gained immense amount of power over Hawkers during this fundamental administrative shift, where hawkers were directly dependent on the State for the good of their livelihoods due to stringent licensing requirements. Inversely, the State was able to utilize the hawker profession as a means to provide for people in a series of successive allowable exceptions amended to the licensing scheme at later times. Of note were two common exceptions, 1.) citizens affected by the PAP's resettlement scheme for redevelopment and economic restructuring could apply for a license, and 2.) citizens who

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<sup>116</sup> Ibid

<sup>117</sup> Tzen, 2006, pp. 62

<sup>118</sup> Grice, Kevin, The Institutionalisation of Informal Sector Activities: A Case Study of Cooked Food Hawkers in Singapore, Thesis, University of Keele, 1988, pp. 166

<sup>119</sup> Clammer, John, Beyond the New Economic Anthropology, Hong Kong: St. Martin's Press, Inc, 1987, pp.

could prove “hardship” due to personal need and unforeseen circumstances could apply for a hawker license.<sup>120</sup> The State could utilize the hawker profession as a reservoir of jobs that could ease unemployment during times of economic hardship. The formation of new enforcement squads under the Operations and Enforcement Section in 1972<sup>121</sup> and subsequently in 1987 with the Special Squad<sup>122</sup> allowed the government to reaffirm its “power and authority to rule and punish when necessary.”<sup>123</sup>

### **2.1.3 Independence 1965-1980's**

While implementing the new licensing schemes after 1968, 1971 marked an important year for many hawkers due to the establishment of the Hawker Centres Development Unit (HCDU). This agency was tasked with re-housing the newly licensed itinerant hawkers into newly constructed hawker centres. Under the oversight of the Hawker Centres Development Committee (HCDC), the location of hawkers existing and newly licensed were approved and recommendations provided for new centres. By 1986, all street hawkers were relocated to hawker centres, eliminating much of the source of problems associated with their originally itinerant practices, namely pollution, street congestion and sanitary concerns.<sup>124</sup>

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<sup>120</sup> Grice, 1988, pp. 166

<sup>121</sup> Ministry of Environment, Annual Report, Singapore: 1972

<sup>122</sup> Ministry of Environment, Annual Report, Singapore: 1987

<sup>123</sup> Tzen, 2006, pp. 63

<sup>124</sup> Ministry of Environment, Annual Report, Singapore: 1986

In 1974, an amendment to the standing 1969 Environmental Public Health Regulations for Markets and Hawkers required all stalls to clearly display price tags.<sup>125</sup> Then, in 1987, in an effort to incentivize good health and hygiene, the Points and Demerit System was implemented, where each public health offense was marked as a demerit for the hawker stall against his/her license.<sup>126</sup> Another program was also implemented in that same year, emphasizing health and sanitary awareness where hawkers were educated on personal hygiene practices and standards. A 1997 addition to the program introduced a grading system for hawkers which reports the levels of cleanliness and food hygiene (A - excellent, B – good, C - average, D – below average).<sup>127</sup> Reported in the Annual Report in 2000 by the Ministry of Environment, 7.9% of establishments received Grade A, 37.9% Grade B, 53.9% Grade C, and 0.3% Grade D.<sup>128</sup> This scheme exists today and acts as a method of educating the population on the safe handling of the goods they are purchasing.

Presently, the continuation of the hawker centre as an established business and part of Singaporean life is in direct relation to the PAP's goal of bringing the hawker community under government oversight and control, eliminating the itinerant hawker problem by relocating them to designated centres complete with infrastructural support necessary for safe food handling and preparation, and implementation of various health safety review programs that better educate and inform both the hawker and the consumer. Clammer

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<sup>125</sup> Ministry of Environment, Annual Report, Singapore: 1974

<sup>126</sup> Ministry of Environment, Annual Report, Singapore: 1987

<sup>127</sup> Ministry of Environment, Annual Report, Singapore: 2000

<sup>128</sup> Ibid

states in his writing that the goals achieved and strategies undertaken by the PAP is aligned with their goals of

“total planning, full economic accountability of each enterprise and individual and a mania for social order defined largely as a management or control ... to ensure a conformity with the continuous restructuring of the economy and maintenance of a tidy urban environment.”<sup>129</sup>

#### **2.1.4 Hawker Relocation Planning**

From the years 1971-1986, the government's desire to relocate itinerant hawkers into regulated structures that provided the basic necessities for food safety and hygiene saw the formation of various practices which helped construct an appropriate infrastructure for the immense number of newly licensed hawkers. As often as possible, the HCDU would work with various development agencies which would be awarded parcels of land for personal development under the premise that the developing agency also build a hawker centre in order to house the affected street hawkers that would be affected by the redevelopment.<sup>130</sup> One of the largest practitioners of this practice was the Urban Redevelopment Authority (URA) who was responsible for many of the residential estates and infrastructural expansions constructed during this time. Of note the URA development of the Golden Shoe Carpark saw the inclusion of a hawker centre at the ground level to rehouse hawkers relocated from the development of the land.<sup>131</sup>

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<sup>129</sup> Clammer, 1987, pp. 191

<sup>130</sup> This text includes numerous references to interviews conducted by Ghani with various former officials involved with the hawker programs. Ghani, Azhar, Success Matters: How Singapore Hawker Centres Came to Be, *IPS Update*, National University of Singapore, Singapore, May 2011, pp. 8

<sup>131</sup> *Ibid*, pp. 8



Figure 11: Golden Shoe Carpark, Thebusinesstimes.com<sup>132</sup>

However, possibly the most influential agency to participate in the development scheme was the Housing and Development Board (HDB), a statutory board of the National Environmental Agency (NEA), who adopted hawker centres as fundamental programs integrated into new residential estates. This shift developed from the problems many of the HDB developments experienced before stringent regulation overcame the hawker problem in the late 1960's. As the HDB explained,

“The influx of unauthorized hawkers into housing estates in the 1960s ... caused serious traffic congestion in car parks, along traffic routes, and in some cases, even prevented the completion of construction works thereby making it difficult to keep the estates clean . . . The Board therefore decided to build its own hawker centres to accommodate the hawkers ... the bigger ones to act as markers as well while the smaller ones, which were semi-covered, would become cooked food hawker centres primarily

<sup>132</sup> The Business Times. Image of Golden Shoe Carpark in Singapore. Image. November 27, 2015. Accessed March 28, 2016  
[http://www.businesstimes.com.sg/sites/default/files/styles/large\\_popup/public/image/2015/11/27/BT\\_20151127\\_KRHOCK27\\_1995962.jpg?itok=gxBFziLY](http://www.businesstimes.com.sg/sites/default/files/styles/large_popup/public/image/2015/11/27/BT_20151127_KRHOCK27_1995962.jpg?itok=gxBFziLY)

sustaining the 'traditional eating-out' habits of many Singaporeans.”<sup>133</sup>

These spaces quickly became integrated into the “public spaces” aspect of new town planning under typical HDB planning guidelines. It was the belief that the incorporating a well integrated public space into the development of new towns would be key to “developing a sense of belonging among residents.”<sup>134</sup> This was pivotal, since the prevailing theme of new town development was their conception as “total living environments,” catering to about 6000 dwellings which could support a primary school, shopping, and community activity nodes within a 400m (0.25mi) walking radius.<sup>135</sup>

Included as infrastructure already present in the new development, once the new estates were completed, hawkers would be brought in from relocated areas and supplied new stalls while residents moved into their new units.<sup>136</sup> One could also assume this was a carefully orchestrated marketing ploy for the new developments which could emphasize the value of having an already in-place infrastructure many residents were familiar with in previously occupied areas of the city. Inversely, the Jurong Town Corporation (JTC), the HDB’s industrial counterpart became involved while developing industrial complexes and centres, using the establishment of hawker centres as suppliers for a commuting work-force. Goh Chin Tong, former head of the Hawkers Department, was quoted saying,

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<sup>133</sup> Tian Boon Tan, *Estate Management*, in Stephen H. K. Yeh (ed.) *Public Housing in Singapore – A Multi-Disciplinary Study*. Singapore: Singapore University Press for Housing and Development Board, 1975, pp 195-7

<sup>134</sup> Hee, Limin, *The Politics of Public Space Planning in Singapore*, *Planning Perspectives*, issue 18, 2003, pp. 92

<sup>135</sup> Ibid, pp. 91

<sup>136</sup> Ghani, 2011, pp. 8



“In the past, what we did was that whenever the URA or someone else wanted to clear certain places, we said you have to have a space for us to build hawker centres. That’s how we had hawker centres in places like Cuppage Centre, Market Street, and Blanco Court and a few other places. There was also a requirement in the early days where, if you employed a certain number of workers, you must have a canteen. If you had 500 workers there would be demand for food and illegal hawkers would come, so we put in the requirement for a canteen to relocate hawkers and also to stop the proliferation of illegal hawkers. But we stopped this practice after we had hawker centres almost everywhere, as workers could then go to these places.”<sup>137</sup>

This relocation program of placing itinerant hawkers into established hawker centers was confronted by a number of logistical issues, the first being the willing relocation of hawkers into centres separate from the area they were typically used to operating with a developed clientele. David Wang, former NEA Director-General of Public Health described their approach,

“generally we understood what they needed ... coupled with that, we took advantage of the fact that HDB was also very actively building housing estates at that time. So whenever there was a housing estate close by, then of course HDB would build markets and hawker centres with these street hawkers in mind. So that when the new estates were ready, the street hawkers hawking nearby would then move over to this housing estate.”<sup>138</sup>

Proximity was key in planning the location of hawker centres. Existing hawkers wanted to be close to their original clientele catchment area, however centres integrated into HDB areas became attractive locations for business due to their close proximity to residences and public transportation. Also careful planning of hawker locations worked to make sure that centres were not too near to each other, as to increase competition and ensure their viability.

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<sup>137</sup> Ibid, pp. 9

<sup>138</sup> Ibid, pp. 9

From 1974-1979, 54 hawker centres were built.<sup>139</sup> But what surprised many, was that during this period, vacancies opened in these centres which were then converted into low-rent accommodations for the unemployed needy. Goh stated,

“There was natural attrition – hawkers passed on, retire or they get sick or they gave up their business, and we had vacant stall. So there was this so-called hardship policy, where we provided stalls for the poor. At that time, I think, the criteria was that the had to be above 35 years of age, be the sole breadwinners earning no more than \$500 per month, with a family and young children.”<sup>140</sup>

Allocation was of concern as well, as many centres were populated with hawkers by luck of balloting. As Goh described it as the only fair way to do it. However, this brought to the forefront another issue, the problem of like stalls next to each other and some centres having too many of one type of stall. Goh describes this by stating,

“You go to Newton and what do you see? Do I need 25 seafood stalls? Do I need such competition? I can’t get bak kut teh [pork bone tea soup] or lor mee [braised noodles in gravy]. So the food mix is not there. Market forces, up to a point, is fine... [but] look at Newton, all selling the same thing so they have the problem of touting to get ahead of the competition. I think maybe there is a need to, say if one of the stalls were to give up business, to stipulate that the replacement vendor sell something else. I would like to see some variety.”<sup>141</sup>

By not controlling products sold in the stalls, Goh hypothesized that the competition between the numerous stalls would in fact increase competition to a point where the business becomes unsustainable to both parties involved. The variety allows for the continued vitality of the hawker’s business in their designated centre.

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<sup>139</sup> Ibid, pp. 10

<sup>140</sup> Ibid, pp. 10

<sup>141</sup> Ibid, pp. 11

Also, concern about the breadth of the hardship policy led to controversy over the abuse of the subsidized rentals program by people who were not necessarily in a hardship. During his administration, Goh witnessed a number of prospective hawkers under this plan wait years for openings in popular centres. Paying subsidized rates for stalls (then subsidized rates) set at \$120, \$240 or \$300, the department began noticing owners not willing to work consistently. Goh states that, “I can just work for 3 or 4 hours a day, making \$30 to \$40, and go on long holidays and still I would be able to cover my rent.”<sup>142</sup> There is a lack of efficiency with little incentive to work to prepare quality goods. In comparison, Goh states that the kopitiam stall (a similar but larger operation than the typical hawker) would rent for \$7,000 - \$8,000 in a similar location.

### **2.1.5 Hawkers in a Developed Singapore 1990's-Present**

After 1986 and the completion of Change Alley Hawker Centre, virtually no new centre has been built, with a few exceptions. In 2011, Ghani cites that there existed “113 government market-cum-hawker centres or stand-alone hawker centres.”<sup>143</sup> According to the government reporting agency Sing Stats, the 113 centres housed a total of 5,855 cooked food stalls, 5,763 produce stalls, and 2,687 sundries/piece stalls (including licensed street vendors such as )(total: 14,305).<sup>144</sup> However, in 2015 the NEA claims to have a total of 107 operating hawker centres. Of the total 107, 81 are owned by HDB

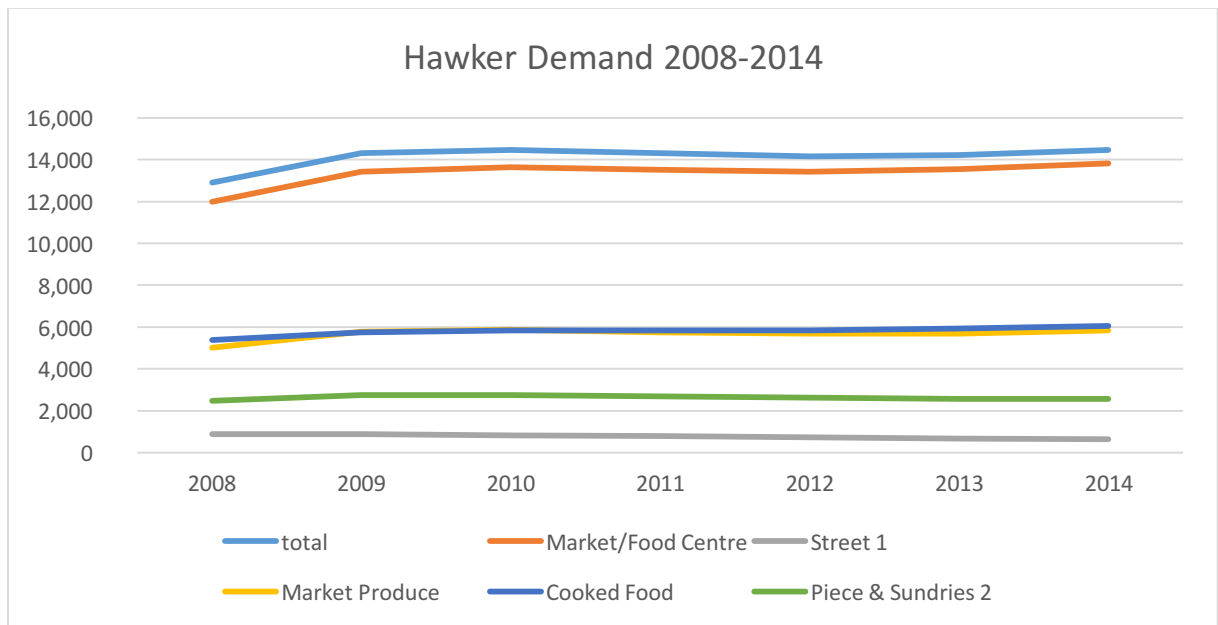
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<sup>142</sup> Ibid, pp. 11

<sup>143</sup> Ghani, 2011, pp. 12

<sup>144</sup> Singapore Department of Statistics, Hawkers and Food Establishments, by Jordan Choo, Singapore: 2015. [http://www.singstat.gov.sg/docs/default-source/default-document-library/publications/publications\\_and\\_papers/reference/yearbook\\_2015/excel/topic24.xls](http://www.singstat.gov.sg/docs/default-source/default-document-library/publications/publications_and_papers/reference/yearbook_2015/excel/topic24.xls) (Accessed Sept 6, 2015), Table 24.1

while the rest are directly managed by the NEA.<sup>145</sup> The number of licensed hawkers reported during 2014 was 6,049 cooked food stalls, 5,857 produce stalls, and 2,560 sundries/piece stalls (total: 14,466).<sup>146</sup>



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Although the trend for demand was at an increase of 1.2% since 2011, the NEA has effectively closed 6 centres. This has been a trend that has been common since the mid 1990's when increased urban development began to close centres in order to use their land for development or repurposing. Goh Chin Tong recalled that this trend happened because , “we were not in the business of providing food stalls.”<sup>148</sup> The immediate goals of the government during the 1972-1986 relocation scheme had been created to clean up the streets and provide oversight and health regulations on a business that often went around the law. Once this job was completed there wasn't any incentive to continue the

<sup>145</sup> "Managing Hawker Centres and Markets in Singapore." Managing Hawker Centres and Markets in Singapore. September 3, 2015. Accessed October 15, 2015.

<sup>146</sup> Singapore Department of Statistics, Hawkers and Food Establishments, 2015. Table 24.1

<sup>147</sup> Figure (\*\*\*\*): with data received from Singapore Department of Statistics

<sup>148</sup> Ghani, 2011, pp. 12

construction of new stall. Goh continues, “the only reason we built hawker centres was because we needed to get hawkers off the streets.”<sup>149</sup> During the immediate years following the completion of the hawker relocation project, development continued with a new policy in hand.

Rather than building new center for relocated hawkers effected by the construction of new development, the official policy was to aim at phasing hawkers out. Hawkers would be paid cash grants and then if the individual wished to continue his/her business, they could do so by finding a stall in another centre.<sup>150</sup> Although many rejected, the closure of many popular centres occurred or where handed over to private operators throughout the 1990’s. It was during this time that acting Minister Lim Swee Say began to recognize the cultural and social significance of the centres, putting a freeze on the policy of phasing out hawkers. Goh commented on the evolution of this new stance by saying, “it is a focal point for the community... during elections, it would be the first stop for aspiring MPs. So Lim said we have to preserve the hawker centres and to do that we have to upgrade them.”<sup>151</sup> This fundamental shift in policy began to a number of questions that were never addressed before, namely, how to deal with hawkers that wished to leave the profession and how to encourage the growth of hawkers that wished to stay or join.

No longer were hawkers considered primarily charity-cases where extremely subsidized rentals and government assistance were used to bring people in from hawking on the streets, but as bon-a-fide businesses that operate at successful profit margins. Rather than

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<sup>149</sup> Ibid, pp. 12

<sup>150</sup> Ibid, pp. 12

<sup>151</sup> Ibid, pp.12

phasing out the hawker and the hawker centres, the new stance sought to phase out subsidization in lieu of self reliance and market value factors. February of 2001 began the start of the Hawker Centres Upgrading Programme (HUP) with a total of S\$420 million dollars allocated to the improvement of hawker centres island wide.<sup>152</sup> A total of 19 centres were upgraded in 2001, with the scope of work addressing a number of improvements. Retiling, replacement of tables and stools, a new seating pattern for improve circulation, replacement of sewer/sanitary pipes, new electrical, improved ventilation, replacement of exhaust flue systems, improved restrooms, improved bin centres, and re-roofing were of main concern for upgrading projects. The program also encouraged the upgrading of disability access and barrier/obstruction free movement through the centres. Of note was the consolidation and creation of basic facilities such as central freezer areas and washing stations. By 2014, 106 centres had been completely upgraded with some being reconfigured or rebuilt.<sup>153</sup>

During this upgrading process, careful steps were taken in order to ensure positive NEA-Hawker relations and not to disrupt their day-to-day business. Programs enabled the residing hawkers the ability to organize in collaboration with “local grassroots organizations” to set-up and operate temporary centers, or move into temporary/vacant stalls in nearby centres. Provided with a removal allowance of S\$1000, hawkers who chose to relocate were offered stalls at the subsidized rate for the duration of the upgrade.

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<sup>152</sup> "The Story of Hawker Centres Upgrading Programme (HUP)." HUP Commemorative. October 14, 2015. Accessed October 26, 2015. [http://www.nea.gov.sg/public-health/hawker-centres/the-story-of-hawker-centres-upgrading-programme-\(hup\)](http://www.nea.gov.sg/public-health/hawker-centres/the-story-of-hawker-centres-upgrading-programme-(hup)).

<sup>153</sup> Ibid

Hawkers who chose not to relocate was given the option to take a break from operations while their stall remained on reserve in the centre.<sup>154</sup>

#### **2.1.6 Concluding Remarks**

The history between hawker and government in Singapore has been a relationship filled with trouble and strife. Once thought of as a stain of society on the streets, hawkers have gained the right to exist not just as a legal health conscious enterprise, but as a fundamental part of Singaporean culture and life. After many failed attempts to forcefully consolidate hawkers under government oversight and regulation, the shift of policy that took place under Lee Kuan Yew in the early 1970's marked a turning point in hawker relations. The expectation of health safety, environmental quality, and proper hygiene became not just a focus of the government, but Singaporean citizens who demanded quality centres and practices. The filth that once surrounded the industry was no longer accepted in a modern Singapore.

Furthermore, the relocation of itinerant hawkers into centres portrayed an administration that was open to keeping successful relationships with stall operators, thus keeping them within the law and more accepting of the new relocation scheme. The then Ministry of Environment was careful to assign hawkers to centres not only as a geographic change, but also took into account the types of businesses the centre already housed and the location of the hawker's original clientele.<sup>155</sup> To many hawkers, this signaled that maybe

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<sup>154</sup> Ghani, 2011, pp. 12-13

<sup>155</sup> Ibid, pp. 14

adopting the government regulations and agreeing to relocation wasn't such a bad idea. This served to achieved the government's "bigger objective to keep Singapore clean."<sup>156</sup>

With these changes, public health benefits also managed to become central to the idea of hawker centres. A two-sided plan of action was enacted by the Ministry of Environment to tackle the issue much of the population was concerned about when purchasing from hawkers: regulate and educate.<sup>157</sup> In order to regulate, control systems of health code compliance became systematic in incentivizing good practices and discouraging unsafe practices. The 1987 Demerit Points System and subsequent 1997 grading system implementation allowed for greater oversight by health officials and allowed the public to take a conscious role in encouraging safe food preparation practices. The grading system also expanded the understanding of safe food preparation strategies to include not just food hygiene but good housekeeping and personal hygiene awareness. The system not only graded the businesses, but the hawkers themselves.

Programs aimed at ensuring all hawkers knew current health codes also became integrated into the licensure policy, where the satisfactory completion of the Food Hygiene Certificate was needed to before registration. Also, along with annual rating reviews, which ensured continuous safe hygiene practices, education on how to enhance one's health safety practices came in the form of exhibitions, talks, posters, and pamphlets.

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<sup>156</sup> Ibid, Goh, pp. 5

<sup>157</sup> Ibid, pp. 14





Figure 12: Good Hygiene Poster that empowers the public, [nea.gov.sg](http://www.nea.gov.sg)<sup>158</sup>

As part of the restructuring of centres occurred, the streamlining of shared facilities and services introduced government certified contract cleaners who were approved to cleanly and efficiently maintain common areas and clear tables. To ensure quality contractors, the National Skills and Recognition System “ensured that cleaners were properly trained to clean floors and toilets, as well as crockery and tables.”<sup>159</sup>

Increased collaboration between hawkers and the government has led to a successful institution that has led to the inclusion of hawkers into the defining characteristics of Singaporean culture. Continued consultation in public processes has led to the reorganization and planning of more efficient and successful hawker centres across the nation. Today, these centers are tasked with feeding the nation’s people in a country that has flourished economically in the past 50 years since independence.

<sup>158</sup> *Good Food Hygiene Tips*. National Environmental Association, Singapore. Accessed March 24, 2016. [http://www.nea.gov.sg/docs/default-source/public-health/food-hygiene/Guidelines/educational-posters/good-food-hygiene-tips-that-you-can-adopt-\(for-consumers\).jpg](http://www.nea.gov.sg/docs/default-source/public-health/food-hygiene/Guidelines/educational-posters/good-food-hygiene-tips-that-you-can-adopt-(for-consumers).jpg).

<sup>159</sup> *Ibid*, pp. 14



## 2.2 Planning for Hawker Centres

Since colonial occupation, planning in Singapore has been a top down practice heavily monitored and administered by the government and authorities at that time. After the expulsion of Singapore from Malaysia in 1965, Prime Minister Lee Kuan Yew and the ruling People's Action Party saw the opportunity to model a new Singapore to overcome the problems that plagued the young nation that underwent recent decolonization. Key programs were initiated to deal with the problems associated with the housing crisis. In 1960 the HDB had been created as a statutory board of the NEA and provided the powers to begin relocation and redevelopment of slums and crowded areas of the city. Not until 1972 were hawker centres integrated into the planning of new community town centres as public spaces developed by the HDB to attract new tenants during the nation-wide redevelopment scheme. Successfully relocating all itinerant hawkers within designated hawker centres, 145 centres were built within the years of 1972-1987.

The city-state and island nation of Singapore is approximately 211.65 mi<sup>2</sup> (719.1 Km<sup>2</sup>) with a population of 5,535,002 residents in 2015. The population density is among the highest in the world, 19,935 person per mi<sup>2</sup> (7,697 persons per Km<sup>2</sup>).<sup>160</sup> To efficiently manage such high densities, Singapore has a unique administrative division structure to approach planning goals and objectives. Aside from electoral districts which follow different boundaries, the following structure is highlighted by the URA from largest to smallest,<sup>161</sup>

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<sup>160</sup> "Latest Data." Department of Statistics Singapore. October 30, 2015. Accessed October 31, 2015. <http://www.singstat.gov.sg/statistics/latest-data#14>.

<sup>161</sup> "Master Plan." View Planning Boundaries. October 29, 2015. Accessed October 31, 2015. <http://www.ur.gov.sg/uol/master-plan/Contacts/View-Planning-Boundaries.aspx>.

- **Nation:** the entirety of Singapore and its holdings, planning as dictated by parliament or like agencies.
- **Planning Regions:** 5 geographically referenced regions, central, east, north-east, north, and west, population is greater than 500,000 people.
- **Planning Areas:** subdivisions of Regions with populations greater than 150,000, usually organized around a specified town centre and other commercial/public areas.
- **Planning Subzones:** 10+ smaller divisions of Areas made up of individual estates and neighborhoods, usually centered around a neighborhood focal point or activity node.

Integral to the redevelopment of Singapore was the creation of New Towns. First conceived in the early 1960's by the People's Action Party, New Towns were adopted as the solution to a growing housing problem and slum conditions that defined Singapore after independence and expulsion from Malaysia.<sup>162</sup> In 1992 Tampines New Town was given the World Habitat Award from the Building and Social Housing Foundation of the United Nations. The goal of the award is to highlight housing projects that promote a sustainable method of providing housing to disadvantaged communities and set precedence for future development elsewhere.<sup>163</sup> Tampines New Town represents the culmination of 30 years of development in public housing planning.

The primary factor decided early on in the development of public housing estates was the decentralization of population within the city centre and creation of satellite towns to discourage commuting into the city.<sup>164</sup> This ultimately led to the creation new towns. By importing public housing models developed by CIAM (Congrès Internationaux

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<sup>162</sup> "History." Housing Development Board. October 8, 2015. Accessed October 31, 2015.  
<http://www.hdb.gov.sg/cs/infoweb/about-us/history>.

<sup>163</sup> "Winners and Finalists." World Habitat Awards. Accessed October 31, 2015.  
<http://www.worldhabitatawards.org/winners-and-finalists/project-details.cfm?lang=00&theProjectID=116>.

<sup>164</sup> Hee, Limin, 2011, pp. 89

d'Architecture Moderne), the entire spatial environment changed for all of Singapore within a single generation. Efficient unit design and high-rise development stood in stark contrast to the spontaneous and organic nature and layout of the shophouses of colonial Singapore.<sup>165</sup> This effectively eliminated the *anjung* (Malay: verandah) or social spaces that allowed for intimate interactions with community members. The relation the the kampong house of Malay rural construction gave a unique identity for the built environment that many continue to appreciate in Singapore.

Public Space became the leading factor for the design of such projects during the second phase of planning development. In 1965, the Toa Payoh New Town introduced self-sufficiency measures in the form of a town centre and other commercial facilities.<sup>166</sup> However, it was the last to provide housing units at the ground level. Development from the early 1970's onwards provides void decks at ground level where different functions could be performed.<sup>167</sup> The HDB saw it as a "point of departure to work, school and market, a waiting or meeting-point, a games area (e.g. chess, table tennis), and an informal gathering-place, particularly for the elderly and for housewives."<sup>168</sup> The prolific utilization of this space is described by Ooi and Tan as "one of the most important settings for common life in public housing estates."<sup>169</sup> This space, integrated into the the fabric of every HDB housing project, became the first public space deliberately assigned to serve the HDB residents, allowing the space to be booked for a number of cultural

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<sup>165</sup> Ibid, pp. 90

<sup>166</sup> Ibid, pp. 90

<sup>167</sup> Giok Ling Ooi and Thomas T. W. Tan, *The Social Significance of Public Spaces in Public Housing Estates*, in B. H. Chua and N. Edwards (eds), *op. cit.* [14], p. 70.

<sup>168</sup> Beng Huar Chua, *Political Legitimacy and Housing: Stakeholding in Singapore*. London: Routledge, 1997, pp 82-3.

<sup>169</sup> G. L. Ooi and T. T. W. Tan, *op. cit.* [46], p. 73

events, serving the nation's goal of "harmonious living" amongst the nation's various ethnic groups.<sup>170</sup>



Figure 13: Void Deck used as wedding space<sup>171</sup>

A third phase of development began with the construction of Ang Mo Kio New Town in 1973 which established a hierarchical model for a community designed around a town centre which services the nearby estates and subcentres.<sup>172</sup> Composed of +/-6000 housing units and designed as totally self-contained living communities (roughly 40 hectares), new town planning dictated that "schools, shopping and community activity nodes [were] within a walking distance of 400m."<sup>173</sup> Physical demarcation of new towns existed by utilizing public features such as roads, walkways, schools, markets, transport facilities and food centres.<sup>174</sup>

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<sup>170</sup> HDB Residents Handbook, *Harmonious Living* 21.

<sup>171</sup> Larkin, John. *Malay Wedding*. October 2000. Singapore. Accessed March 23, 2016.  
[http://www.larkin.net.au/wp-content/uploads/2013/03/malay\\_wedding\\_03.jpg](http://www.larkin.net.au/wp-content/uploads/2013/03/malay_wedding_03.jpg).

<sup>172</sup> Hee, Limin, 2011, pp. 91

<sup>173</sup> *Ibid*, pp. 91

<sup>174</sup> *Ibid*, pp. 91

However, the open nature of the HDB developments often worked against planning authorities in terms of transportation services and social interaction. People were not protected from the weather along open planned routes and often chose to form new shortcuts through existing HDB void decks and communities. Open space guidelines were introduced in the mid-1970's and constant revisioning of building spacing ultimately culminated in a fourth stage of development for HDB communities.<sup>175</sup> The fourth and final stage, the New Town Structural Model, introduced the "checkerboard" plan as a mean to develop precincts as basic units of development within a new town.<sup>176</sup> Each plot being 2-4ha, 400-800 families would be housing in 4-8 housing blocks (buildings) and serviced by a precinct centre such as a games court, playground or garden.<sup>177</sup>

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<sup>175</sup> T. K. Liu, W. C. Lau and C. T. Loh, New Towns in Singapore, in Y. M. Yeung (ed.) *A Place to Live: More Effective Low-Cost Housing in Asia*. Ottawa: International Development Research Centre, 1983, pp 27-47.

<sup>176</sup> Tony K. J. Tan *et al.*, Physical Planning and Design, in Aline Wong and Stephen H. K Yeh (eds) *Housing a Nation: 25 years of Public Housing in Singapore*. Singapore: Maruzen Asia for HDB, 1985, pp. 56-112.

<sup>177</sup> *Ibid*

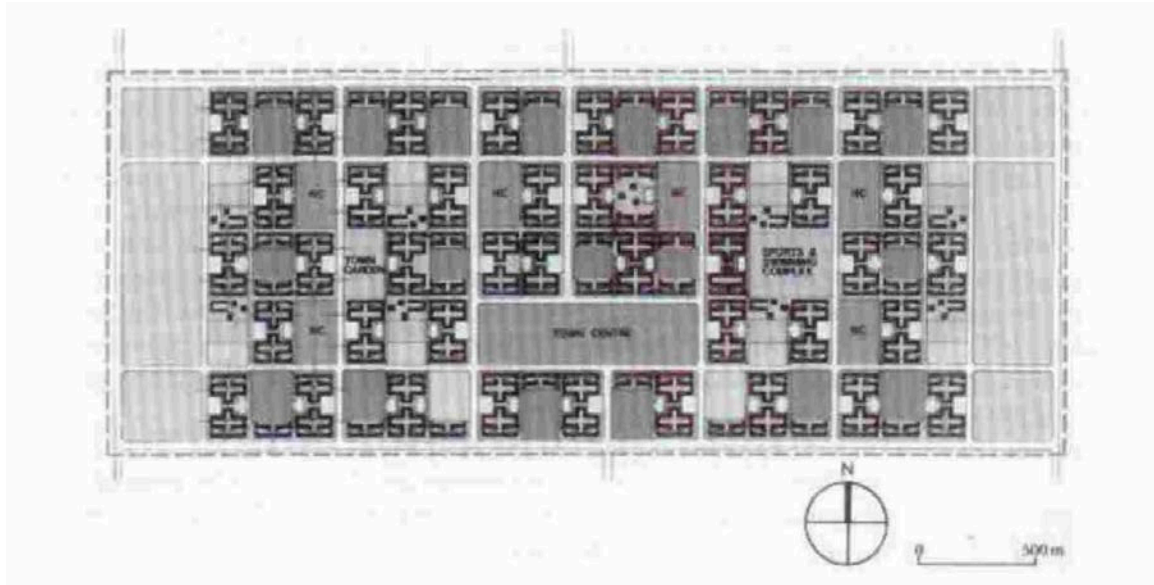


Figure 14: Checkerboard Housing Plan For Singapore<sup>178</sup>

Ultimately the neighborhood planning scheme was dropped in favor of the precinct plan, where scales were small enough to begin developing community identities with dense high rise development. The HDB established a formula for spatial clusters where blocks (buildings) would be designed around focal points, such as open spaces, playgrounds and gardens. A re-envisioning of communal public spaces occurred that saw to the avoiding of large open spaces between buildings and the transformation of spaces into “residential greens or squares, where appropriate.”<sup>179</sup> This resulted in the channeling of traffic from node to node and eventually linking the entire neighborhood to the Neighborhood Centre. Hee describes the ascension of public spaces as one leaves their home,<sup>180</sup>

### **Lift Lobby – Void Deck – Precinct Centre – Neighborhood Centre – Town Centre**

<sup>178</sup> Wong, A., and S. H.K. Yeh. *Checkerboard Layout of New Towns*. Singapore. In *Housing a Nation: 25 Years of Public Housing in Singapore*. Singapore: Maruzen Asia, 1985.

<sup>179</sup> T. K. Liu *et al.*, *op. cit.* [54], p. 41.

<sup>180</sup> Hee, Limin, 2011, pp.92



Under HDB policy during the time of the third phase of development, hawker centres were deemed part of public space in newly developed estates and town centres.

“The Board therefore decided to build its own hawker centres to accommodate the hawkers ... the bigger ones to act as markets as well while the smaller ones, which were semi-covered, would become cooked food hawker centres primarily sustaining the 'traditional eating-out' habits of many Singaporeans.”<sup>181</sup>

In the checkerboard model of planning, the creation of public space was organized into two categories of “reserved sites.” Category one was for the development of program for non-residential buildings, 0.2-0.6 ha in size and “liberally and strategically” placed in the new town. Category two identified pockets within residential areas that would be reserved for growth at a later time.<sup>182</sup> Standards of public space planning are presented in figure 15 which provides a framework for HDB projects during the fourth stage of development.

Facilities	Planning Standards
<b>Commercial</b>	
Shops	1 shop per 70 dwellings
Supermarkets	1-2 per new town
Cinemas	2 per new town to be located in town centre

<sup>181</sup> Tian Boon Tan, Estate Management, in Stephen H. K. Yeh (ed.) *Public Housing in Singapore- A Multi-Disciplinary Study*. Singapore: Singapore University Press for Housing and Development Board, 1975, pp 195-7.

<sup>182</sup> T. K. J. Tan *et al.*, *op. cit.* [55], p. 108.

<b>Institutional</b>	
Primary School	2300 dwelling units o one school
Library	1 per new town
Community Centre	1 per 4000 to 5000 dwelling units
<b>Sports and Regulation</b>	
Neighbourhood Park	1 per neighbourhood
Hard Court for Basketball	1 court per 1000 to 2000 dwelling units
Swimming Complex	1 per new town

*Figure 15: Planned Hierarchy of new town facilities provided by HDB<sup>183</sup>*

A fifth stage of planning was announced in 1996 when the plans for Punggol 21 was released on National Day. The new development was heralded as “Singapore’s New-age town filled with residential HDB flats, condominiums, recreational facilities and a waterfront living centre.”<sup>184</sup> The new proposal combined housing, education, commercial and recreational programs into mix-use communities that emphasized pedestrian focused communities that were serviced by light rail transport.<sup>185</sup>

<sup>183</sup> Ibid, 108. Table made from data found in source

<sup>184</sup> “Punggol New Town”, Punggol.com, Accessed November 8, 201. <http://www.punggol.com>

<sup>185</sup> Hee, Limin, 2011, pp. 95

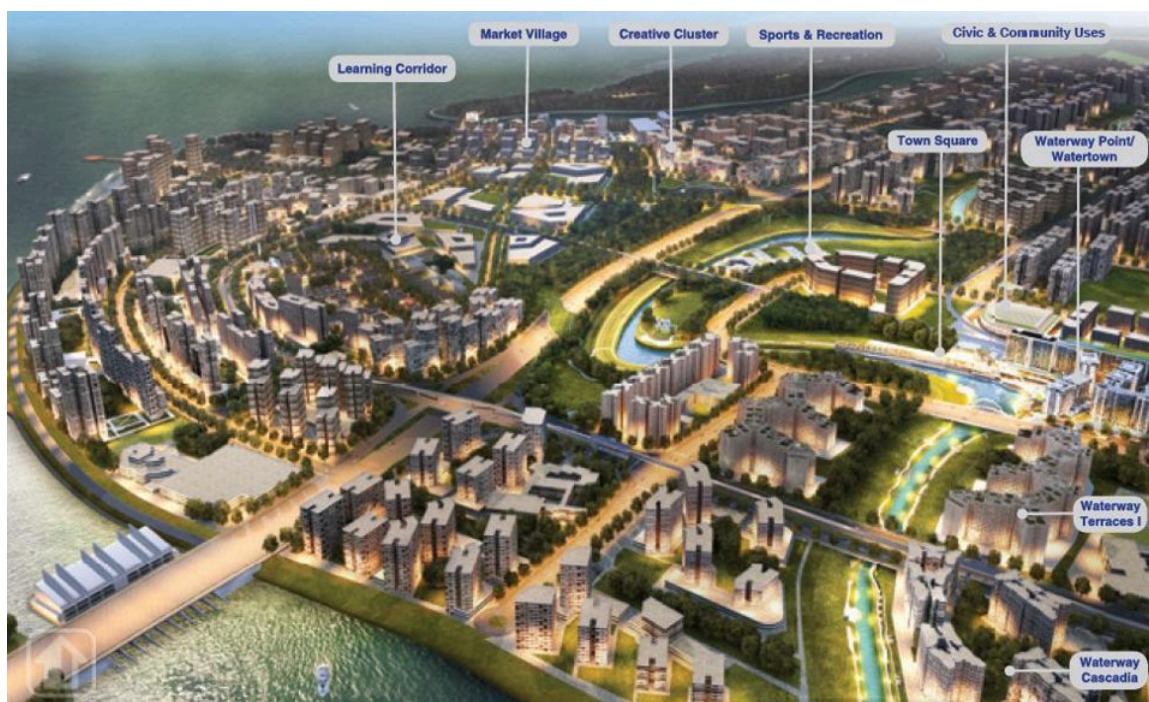


Figure 16: North Coast Creative Cluster and Learning Corridor, Punggol New Town<sup>186</sup>

According to Hee, the method of planning locations, relative sizes and appropriate designs was informed primarily by “architectural and urban land-use policy objectives than user needs.”<sup>187</sup> However, Aline Wong states that a number of studies proved that a majority of residents met neighbours and friends along public corridors, lift lobbies and void decks with residents being primarily concerned with the programming being derived from aspects they perceived as being part of their everyday routine.<sup>188</sup> This fundamental shift in planning paradigms has been widely contested and revisited by planning authorities due to the failure to meet objectives. Punggol’s community website highlights the blunder by explaining that by 2008 (12 years after Punggol 21 was revealed) only

<sup>186</sup> *North Coast Creative Cluster and Learning Corridor*. Singapore. Accessed March 23, 2016. <http://www.directsgec.com/punggol-moving-forward/>.

<sup>187</sup> Hee, Limin, 2011. pp. 95

<sup>188</sup> Aline Wong, Giok Ling Ooi and R. S. Ponniah, Dimensions of HDB Community, in A. Wong and S. H. K Yeh (eds), pp. 470

16,000 HDB flats had been created, a fraction of the total 80,000 that had been originally planned. The introduction of Punggol 21 Plus aims to re-envision the original master plan and make changes to it to make it into a “brand new enticing vibrant town.”<sup>189</sup> The site continues to exclaim that, “there are so many ongoing plans to Jazz up Punggol to make it the trendiest Town.”<sup>190</sup>

What stood out the most about the Punggol 21 development however was its hierarchical approach to designing public spaces, which Hee describes as contrary to and disregarding of previous experiences and research done in support of interconnected networks of public space.<sup>191</sup> As Tzamiir puts it, “The public space network which includes roads, pedestrian paths, open spaces and public facilities of different kinds, is the physical skeleton, the main function content and the symbolic meaning of urban life.”<sup>192</sup> In other words, the importance of interconnectedness should be emphasized and practiced as much as possible in forming the living body of the urban context.

The construction of “public” space rather than “private” space has proven beneficial to the longevity of hawkers as a resource. Many of the programs presented by these different planning strategies emphasize greater social interaction and cross-cultural exchanges. As this section identifies the roots of how hawker centres were allowed to proliferate across the Singaporean landscape, the next section will dive in to the formal expression of centres and how they have been upgraded to reflect a more.

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<sup>189</sup> “Punggol New Town”, <http://www.punggol.com>

<sup>190</sup> Ibid

<sup>191</sup> Hee, Limin, 2011, pp. 96

<sup>192</sup> Y. Tzamiir, The Urban Public Space Network as a Planning Concept, in D. Soen (ed.) *New Trends in Urban Planning*. Oxford: Pergamon Press, 1979, p. 85.

## **2.3 The Architecture of Singapore Hawker Centres**

### **2.3.1 Need Based Design**

In 1978, K.R. Rao and J.C. Ho of the University of Singapore departments of Building Science and Mechanical Engineering, describe the hawker centres of early HDB development to be “large single-storey structures... 2000m<sup>2</sup> (21,500 ft<sup>2</sup>) and a roof height of about 5m (16.5 ft).”<sup>193</sup> Being open-air, the buildings maximize cross ventilation and utilize cheap Spandek sheets as roofing material to provide a covered space for patrons in Singapore’s humid tropical environment. Their description continues by describing the centres as typically rectangular (60 x 40m or 200 x 130ft) and having a green painted roof as to reduce solar radiation heat gain. To maintain efficient building and cost, heights vary between 5-8m (16-26ft) and include a large fascia of about 3m (10ft) to provide protection from sun and rain for patrons under the roof. Steel and concrete structures support the buildings.<sup>194</sup>

In parallel rows running the length of the centre, stalls are located with a distance of 10m (33ft) between rows. The space between is populated with small tables and chairs. In elongated centres, a row is placed centrally and tables are organized along the outside of the structure. Above stalls are ventilation fans that exhausted the cooking fumes and

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<sup>193</sup> Rao K.R. and Ho J.C., “Thermal Comfort Studies in Hawker Centres in Singapore”, Building and Environment, Vol. 13, Pergamon Press Ltd. 1978, pp. 161

<sup>194</sup> Ibid, pp. 161-162

smoke away from the stalls and dinning areas. The larger square shaped centres often had difficulty in increasing airflow in the central areas.<sup>195</sup>



*Figure 17: Hawker Centre circa 1970's*<sup>196</sup>

Stalls are the basic unit for design in hawker centre construction. In October of 2015 the NEA released the month's Tender Notice, which lists all available stalls open to bidding by prospective tenants and those awarded to bidders. Of the 19 available cooked food<sup>197</sup> stalls listed in various centres, the average stall had an average area of 7.2 m<sup>2</sup> (78 ft<sup>2</sup>) with the smallest being 4.48 m<sup>2</sup> (48 ft<sup>2</sup>) and the largest being 12 m<sup>2</sup> (129 ft<sup>2</sup>).<sup>198</sup> Each stall is provided basic electrical and plumbing connections, as well as equipment installation as per trade at additional cost. Renovation and addition to a tenant's stall is allowed under review of the NEA. Such renovations include the upgrading of provided appliances,

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<sup>195</sup> Ibid, pp. 162

<sup>196</sup> *Hawker 1*. Heritage on the Move, National Heritage Board, Singapore. Accessed March 23, 2016.  
<http://www.nhb.gov.sg/resources/heritage-on-the-move/hawker-centres>.

<sup>197</sup> It is important to delineate cooked food as other stalls listed apply to dry goods, sundries, and markets

<sup>198</sup> "Tender Notice Table." Tender Notice Table. October 26, 2015. Accessed November 12, 2015.  
<http://www.nea.gov.sg/services-forms/tender-notice>.



rewiring of existing electrical to accommodate hawker, installation of shared wall mounted accessories, demolition of partition walls and omission of partition walls under the Hawker Upgrading Program. At the termination of lease, the stall has to be returned to the NEA in its original state or else the tenet forfeits the upgrade deposit made to the NEA.<sup>199</sup>



Figure 18: Jin Hua Sliced Fish Bee Hoon Stall<sup>200</sup>

The construction of the centre typology as witnessed by K.R. Rao and J.C. Ho persisted throughout the various phases of the hawker centre relocation program. Other construction types, although fewer than those of the HDB development scheme, included the adaptation of existing markets, primarily in the dense urban core. Of particular example is the Lau Pa Sat Centre or Telok Ayer Market. It is the only market considered a historical landmark by the National Heritage Board of Singapore, the centre was originally built in 1823 on the former waterfront of Telok Ayer Bay. Its design originally

<sup>199</sup> "APPLICATION FOR PERMIT FOR ADDITIONS & ALTERATIONS (A&A) WORKS TO HAWKER STALLS IN MARKETS & HAWKER CENTRES." Addition & Alterations. September 1, 2014. Accessed November 12, 2015. <http://www.nea.gov.sg/docs/default-source/services-and-forms/licences-permits-building-plan-clearances/application-for-permit-for-additions-alteration-works.pdf>.

<sup>200</sup> Ang, Daniel. *Maxwell 15*. Singapore. Accessed March 23, 2016. <http://danielfooddiary.com/2015/08/27/maxwellfoodcentre/>.

allowed for piers to stretch out over the shore and the movement of produce and goods directly into the market. In 1838, architect George Drumgoole Coleman expanded the building to form an octagonal building with ornamental columns fronting the entrance to the market. This building lasted until 1879 when land reclamation schemes called for its demolition.<sup>201</sup>



*Figure 19: Lau Pa Sat Food Center after upgrade<sup>202</sup>*

In 1894 Municipal Engineer James MacRitchie designed the current cast-iron structure, adopting the design ideals of Coleman and the octagonal shape of the original building before while adding a Victorian aesthetic. Originally showcasing a fountain in the centre of the building, in 1920 it was relocated to another location and a clock tower built in its place. The architecture, which has been retained throughout the years, exhibits eight high-ceilinged passageways, sectioned by air wells that serve to ventilate the canopy

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<sup>201</sup> "Former Telok Ayer Market (now Known as Lau Pa Sat)." National Heritage Board. June 2, 2015. Accessed November 12, 2015. <http://www.nhb.gov.sg/places/sites-and-monuments/national-monuments/former-telok-ayer-market-now-known-as-lau-pa-sat>.

<sup>202</sup> *Lau Pa Sat*. Straits Times, Singapore. Accessed March 23, 2016. <http://www.straitstimes.com/singapore/gas-leak-discovered-near-lau-pa-sat-food-centre-closed-for-2-hours-on-tuesday-morning>.



structure. At the end of each passageway is a large entryway. A windowed superstructure at the apex of the roof provides natural lighting for occupants under the canopy.<sup>203</sup>

### **2.3.2 Renovation: The Hawker Upgrading Program**

In 1973 the market was recognized as a national monument and converted into a hawker centre under the hawker relocation plans and remained in use until 1986 when a new transit line required for the closure of the facilities. Keen to protect the landmark, the iconic cast-iron supports were placed into storage until the building was approved for reconstruction in the late 1980's.<sup>204</sup> Reopened in 1991, the market featured a modern food court largely unsuccessful due to the lack of ventilation. The space was taken over by food court company Kopitiam in 1995. In 2014, the centre received a SG\$4 million renovation that brought many new upgrades that improved ventilation, better traffic flow and expanded the seating capacity to 2500 diners.<sup>205</sup> Improvements to lighting and modern upgrading of facilities helped revitalize the aging building.

However, for most centres which have survived the various phases of redevelopment that defined the growth of Singapore from 1973 to the mid 1990's, much of their initial design and organization followed the model observed by K.R. Rao and J.C. Ho. Their design became homogenous as HDB development relocated entire populations in the redevelopment of Singapore's city centre. The acknowledgment of the social importance of hawker centres in the mid 1990's as pointed out by Goh in his interviews with Azhar

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<sup>203</sup> Ibid

<sup>204</sup> Ibid

<sup>205</sup> Lin, Melissa. "Revamped Lau Pa Sat Opens Today after \$4m Renovation." The Straits Times. June 30, 2014. Accessed October 27, 2015. <http://www.straitstimes.com/singapore/revamped-lau-pa-sat-opens-today-after-4m-renovation>.

Ghani led to a revitalization that transformed the image of the hawker centre for a new generation in Singapore.

The upgrading programs (HUP) initiated by the NEA in 2001 saw to the modernization and case-by-case renovation of individual hawker centres across the nation. The HUP has addressed fundamental issues that the previous homogenization of many centres failed to achieve. The NEA has highlighted a number of projects for further study. The first project of note as provided by the NEA to exemplify various aspects of upgrading is Blk 341 Ang Mo Kio Ave 1 Centre (Teck Ghee Court). Having burnt down in 2001, over 100 stallholders' livelihoods were at stake. The HUP classified the centre as its first rebuild and work began reconstructing the facilities in June of that same year. Ms. Ivy Ong, former head of the Markets and Hawkers Policy & Projects Unit, described her close interaction with architects on the preferred layout of stalls in the centre. Market stalls and cooked food stalls were segregated to enhance efficiency. Unique to the upgrading of this facility was the addition of service corridors behind stalls. This allowed for the continuous display of goods along market slab stalls and discouraged the act of stallholders extending their goods and services into the common passageways.<sup>206</sup>

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<sup>206</sup> "Blk 341 Ang Mo Kio Avenue 1." Blk 341 Ang Mo Kio Avenue 1. July 28, 2015. Accessed November 10, 2015. [http://www.nea.gov.sg/public-health/hawker-centres/the-story-of-hawker-centres-upgrading-programme-\(hup\)/did-you-know-/blk-341-ang-mo-kio-avenue-1](http://www.nea.gov.sg/public-health/hawker-centres/the-story-of-hawker-centres-upgrading-programme-(hup)/did-you-know-/blk-341-ang-mo-kio-avenue-1).



*Figure 20: Before and After Stall Upgrade and other upgrades<sup>207</sup>*

Blk 347 Jurong East Avenue 1 Centre (Yuhua Market and Hawker Centre) also saw partial rebuilding in an effort to reduce rain penetration due to the poorly designed layout of the original centre. Originally being composed of five separate sections, the centre saw unification of each section under one interconnected roof section. This provided adequate sheltering from the elements such as sunlight and rainfall, which often prompted stallholders in the previous centre to self install bamboo blinds and other shielding materials which added to the visual clutter of the complex. The renovation also saw to the expansion of dinning area and adequate restroom facilities. It also became the first centre to adopt healthier food options, where cooked foods may be requested to be cooked using healthier oil, reduced salt and less sugar/syrup. Mr. Chen Kim Sun, member of the HUP Working Committee for Blk 347 and market stall operator for 30 years, explained, “Everyone felt that the upgraded centre has become much more beautiful.”<sup>208</sup>

<sup>207</sup> *Ang Mo Kio HUP Photos*. National Environmental Agency, Singapore. Accessed March 23, 2016. [http://www.nea.gov.sg/public-health/hawker-centres/the-story-of-hawker-centres-upgrading-programme-\(hup\)/did-you-know-/blk-341-ang-mo-kio-avenue-1](http://www.nea.gov.sg/public-health/hawker-centres/the-story-of-hawker-centres-upgrading-programme-(hup)/did-you-know-/blk-341-ang-mo-kio-avenue-1).

<sup>208</sup> “Blk 347 Jurong East Avenue 1.” Blk 347 Jurong East Avenue 1. July 28, 2015. Accessed November 14, 2015. [http://www.nea.gov.sg/public-health/hawker-centres/the-story-of-hawker-centres-upgrading-programme-\(hup\)/did-you-know-/blk-347-jurong-east-avenue-1](http://www.nea.gov.sg/public-health/hawker-centres/the-story-of-hawker-centres-upgrading-programme-(hup)/did-you-know-/blk-347-jurong-east-avenue-1).

Also considered a partial rebuild, Pek Kio Market & Food Centre saw to the upgrading of an older market without stall partitions, poor ventilation and rainwater protection. Architect Mr. Patrick Lee of Surbana International Consultants Pte. Ltd. Approached the design as trying to solve two conflicting design requirements, “to shield the users from rainwater splashing versus providing high eaves to allow heat to dissipate.”<sup>209</sup> Surbana achieved their goals by utilizing a large curved canopy roof to span over the newly built stalls. Also, the installation of perforated sheets along the open ends of the canopy provide for increased light infiltration, while screening the rain and allowing for ample ventilation. Horizontal louvers shield the area directly below the screen. Surbana secured 39 of the HUP works on upgrading centres across Singapore.<sup>210</sup>

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<sup>209</sup> "Pek Kio Market & Food Centre." Pek Kio Market & Food Centre. July 28, 2015. Accessed November 14, 2015. [http://www.nea.gov.sg/public-health/hawker-centres/the-story-of-hawker-centres-upgrading-programme-\(hup\)/did-you-know-/pek-kio-market-food-centre](http://www.nea.gov.sg/public-health/hawker-centres/the-story-of-hawker-centres-upgrading-programme-(hup)/did-you-know-/pek-kio-market-food-centre).

<sup>210</sup> Ibid



Figure 21: Top Before, Bottom After<sup>211</sup>

The HUP work completed at Taman Jurong Market and Food Centre effectively merged three existing centres into one. Due to limited space, the centre was fully rebuilt vertically into a five-storey complex of market stalls, cooked food and car park. At the time of construction, the idea of utilizing lifts and escalators in the operation of a hawker centre was unheard of. Ms. Pamela Goh, who worked for the NEA's Hawkers Department, also explained that, "for stall holders, it was a new business environment as they would be operating in a multi-storey structure after the upgrading."<sup>212</sup> The SG\$14 million upgrade provided a ground floor reserved for market stalls, two subsequent floors of cooked food

<sup>211</sup> *Pek Kio Market Comparison*. Singapore. Accessed March 23, 2016. [http://www.nea.gov.sg/public-health/hawker-centres/the-story-of-hawker-centres-upgrading-programme-\(hup\)/did-you-know-/pek-kio-market-food-centre](http://www.nea.gov.sg/public-health/hawker-centres/the-story-of-hawker-centres-upgrading-programme-(hup)/did-you-know-/pek-kio-market-food-centre).

<sup>212</sup> "Taman Jurong Market & Food Centre." Taman Jurong Market & Food Centre. July 28, 2015. Accessed November 14, 2015. [http://www.nea.gov.sg/public-health/hawker-centres/the-story-of-hawker-centres-upgrading-programme-\(hup\)/did-you-know-/taman-jurong-market-food-centre](http://www.nea.gov.sg/public-health/hawker-centres/the-story-of-hawker-centres-upgrading-programme-(hup)/did-you-know-/taman-jurong-market-food-centre).



stalls and two floors of parking structure on top. The centre features 122 cooked food stalls and a seating capacity of 1,705 persons.<sup>213</sup>



Figure 22: Taman Jurong Before (top) and After (bottom)<sup>214</sup>

The reconstruction of Pasar Geylang Serai into Geylang Serai Market introduced the most notable increase to seating capacity during the HUP. The formerly single-storey market which housed cooked food stalls alongside wet market stalls was demolished and rebuilt as a two-storey structure designed by Surbana, increasing capacity by 100%. Mr. Oli Abdul Latiff, a thosai specialty stallholder in the market, expressed to reviewers that

<sup>213</sup> Ibid

<sup>214</sup> *Taman Jurong HUP Photos*. Singapore. Accessed March 23, 2016. [http://www.nea.gov.sg/public-health/hawker-centres/the-story-of-hawker-centres-upgrading-programme-\(hup\)/did-you-know-/taman-jurong-market-food-centre](http://www.nea.gov.sg/public-health/hawker-centres/the-story-of-hawker-centres-upgrading-programme-(hup)/did-you-know-/taman-jurong-market-food-centre).

before the separation of market and cooked food stalls, the younger generation would often avoid having to patron stall located within the market.<sup>215</sup> The current structure utilizes an architectural expression typical of Southeast Asian tropical architecture with wide sweeping pitched roofs, layered with other roofs to properly ventilate the space. Perforated facades allow for an aesthetic design at roof ends while allowing proper airflow through the high-ceilinged structure. The market also allows for the selling of retail goods out of various stalls in the market.<sup>216</sup>



Figure 23: Geylang Serai Multilevel Market/Food Centre<sup>217</sup>

<sup>215</sup> "Geylang Serai Market." Geylang Serai Market. July 28, 2015. Accessed November 14, 2015. [http://www.nea.gov.sg/public-health/hawker-centres/the-story-of-hawker-centres-upgrading-programme-\(hup\)/did-you-know-/geylang-serai-market](http://www.nea.gov.sg/public-health/hawker-centres/the-story-of-hawker-centres-upgrading-programme-(hup)/did-you-know-/geylang-serai-market).

<sup>216</sup> Ibid

<sup>217</sup> *Geylang Serai Post HUP*. Singapore. Accessed March 23, 2016. [http://www.nea.gov.sg/public-health/hawker-centres/the-story-of-hawker-centres-upgrading-programme-\(hup\)/did-you-know-/geylang-serai-market](http://www.nea.gov.sg/public-health/hawker-centres/the-story-of-hawker-centres-upgrading-programme-(hup)/did-you-know-/geylang-serai-market).

The final project highlighted by the HUP, and last centre to be upgraded under the HUP program, is Blk 6 Tanjong Pagar Plaza. Being only a renovation, the centre lacked ventilation and vibrancy. Its location above an MRT station also caused difficulty in construction capabilities. The renovation worked to maximize the footprint and the interior space to provide ease of access for pedestrian traffic. Realignment of stalls allowed visual connection from outside to inside and encouraged passers-by to enter the facility with ease at the ground floor. In addition, the roof was modified to incorporate a jack roof at the four corners of the square shaped building to maximize ventilation. Mechanical cooling systems also provide a design feature in the centre of the complex. In the completion of the project, Ms Indranee Rajah, a parliamentary member of Tanjong Pagar, asked for the inclusion of cultural design features in collaboration with the National Heritage Board to enhance the centre's historic significance.<sup>218</sup>

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<sup>218</sup> "Blk 6 Tanjong Pagar Plaza." Blk 6 Tanjong Pagar Plaza. July 28, 2015. Accessed November 14, 2015. [http://www.nea.gov.sg/public-health/hawker-centres/the-story-of-hawker-centres-upgrading-programme-\(hup\)/did-you-know-/blk-6-tanjong-pagar-plaza](http://www.nea.gov.sg/public-health/hawker-centres/the-story-of-hawker-centres-upgrading-programme-(hup)/did-you-know-/blk-6-tanjong-pagar-plaza).





*Figure 24: Tanjong Pagar Food Centre, before (top) and after (bottom)*

The HUP upgrades were highly site specific and decided on a case-by-case investigation. The NEA's acknowledgment that conditions needed to be improved marked an important step in the preservation of Singapore's hawker culture. Although the previously mentioned projects each highlighted different solutions and practices learned to solve fundamental issues related to operation, circulation, and ventilation of the upgraded hawker centres, the HUP covered a number of important general upgrades that were more widely utilized across the board. In Fig. 25, a list of upgrades and a comparison between the previously mentioned centres can be observed, bringing to attention important design features and hawker programming that needed to be carefully looked at in the design process.

<b>Hawker Centre</b>						
	Ang Mo Kio	Blk 347 Jurong East Ave 1	Pek Kio Market	Taman Jurong Market	Geylang Serai Market	Blk 6 Tanjong Pagar
<b>HUP Category</b>						
Rebuild	•			•	•	
Renovate						•
Partial Rebuild		•	•			
<b>Upgrade</b>						
Demolition				•	•	
New-Roof	•		•		•	•
Re-Roofing		•				
Wiring	•	•	•	•		•
Fire Safety	•	•	•	•		•
New Fixtures	•	•	•	•	•	•
Reconstruction of Stalls	•		•			•
Sanitary/Plumbing	•	•	•	•		•
Toilets	•	•	•	•	•	
Bins	•	•	•	•	•	
Washer	•		•	•	•	
Freezer	•		•		•	
Electrical Loading	•	•	•			•
Mechanical Exhaust	•	•	•	•	•	•
Multi-Level Addition				•	•	
Handicapped Access				•	•	
Interior Finishes						•
Historic Preservation						•

Figure 25: HUP Upgrades to Selected Hawker Centers<sup>219</sup>

### 2.3.3 Assessment of the Hawker Typology

Of particular interest to all involved centres was the upgrading of the existing roof or construction of a new roof. Usually cited as being for the increase of thermal comfort/ventilation and protection from the elements, a number of different roof schemes has been utilized to achieve various project goals. Previous hawker centre designs incorporated the use of wide sweeping pitched roofs made of thin Spandek sheets which offered adequate protection, but not appealing to a modern Singapore which has widely

<sup>219</sup>Table created by Author with data collected from the NEA's HUP website: "Did You Know..." Did You Know... July 28, 2015. Accessed November 15, 2015. [http://www.nea.gov.sg/public-health/hawker-centres/the-story-of-hawker-centres-upgrading-programme-\(hup\)/did-you-know-](http://www.nea.gov.sg/public-health/hawker-centres/the-story-of-hawker-centres-upgrading-programme-(hup)/did-you-know-)

adopted air-conditioning in modern construction. N.H. Wong, in his study of natural ventilation in hawker centres in 2003 explains that despite the early upgrading works of the HUP, many continue to complain about poor ventilation, reminiscent of “old, hot and stuffy” hawker centres.<sup>220</sup> Prior to his investigations from 2003 to 2006, the only recorded research on hawker centre ventilation was carried out by K.R. Rao and J.C. Ho in 1978 which concluded that to combat air temperature, relative humidity and poor thermal insulation, the installation of fans for increased airflow and a reflective aluminum foil for thermal radiation was recommended for standard practice.<sup>221</sup>

In Wong’s investigation of Maxwell Centre (constructed in 1935 and converted from wet market to hawker centre in 1985) in the Chinatown district of Singapore’s city centre, he aimed to study the effects of four techniques to improve airflow through a typical hawker centre model. The first method (A) widened distances between rows of stall attitudinally and longitudinally. The second (B) removed rooftop skylights instead for ceiling ventilation. The third method (C) removed perceived barriers such as solid walls at the end of passageways while the fourth method (D) raised the roof of the ~8m (26ft) tall structure by 1.2m.

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<sup>220</sup> Wong, N.h, J. Song, G.h Tan, B.t Komari, and D.k.w Cheong. "Natural Ventilation and Thermal Comfort Investigation of a Hawker Center in Singapore." *Building and Environment* 38, no. 11 (2003): 1335

<sup>221</sup> Rao KR, Ho HC. Thermal comfort studies in hawker centers in Singapore. *Building Environment* 1978; 13: 161–6.



Figure 26: Maxwell Food Centre<sup>222</sup>

His findings as evident in wind tunnel tests show that the increase of ventilation occurs at a much higher rate than before when the roof is lifted above the height of the stall tops and other programmatic barriers. This creates an unimpeded path for airflow entering at the eaves and removal of heated air above the stalls. Furthermore, the combination of ACD showed a 118% improvement in air ventilation. When combining B and D together, the incoming flow of air at the eaves level tend to join with air trapped above the stall and pushes it through openings in the roof. Cooler air flows downwards through widened corridors which pleases the guests.

As a follow-up to the study in 2003, Wong published an article in 2004 which utilized CFD (computational fluid dynamics) simulations to model the effectiveness of three types of mechanical ventilation installed in Maxwell Hawker Centre. Modeling current conditions, the CFD simulation provided real-time feedback on the installation of wall fans, oscillating ceiling fans and ceiling installed exhaust fans. In his results, he found

<sup>222</sup> Chew, Cynthia. *Maxwell Food Centre*. Singapore. Accessed March 23, 2016.  
<http://thefoodpornographer.com/contact/>.

that the installation of fans greatly improved temperature within the centre, but on their own, the exhaust fan system encouraged the heat stack effect and pulled cooler air from the outside at the eaves level more than any other. The ceiling mounted oscillating fans were shown to have only improved circulation at the higher levels of the canopy, as the creation of a vortex in the roof aided in moving heated air out of the top vents. However, at lower levels the fans did little to improve setting area temperatures as hot air would be drawn back down by the position of the fans and disrupted established natural air flow. Wall fans were ineffective at addressing ventilation at higher levels, allowing the heat from hawker stalls to build, but showed to greatly increase air flow amongst the seating areas. In his conclusion he advocates for the dismissal of ceiling fans as a means to cool seating areas and instead recommends the combined usage of wall fans for seating areas and exhaust fans above hawker stalls.<sup>223</sup>

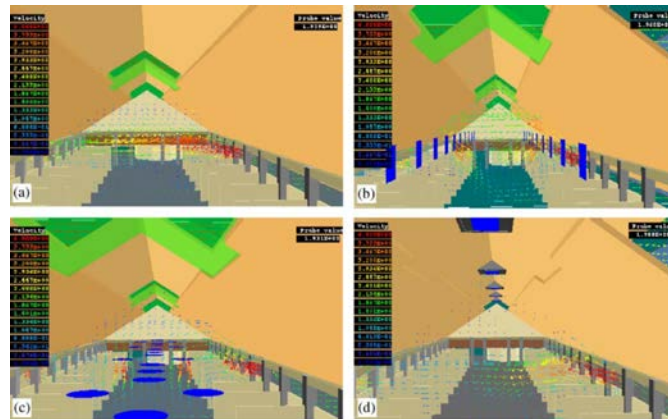


Figure 27: Airflow CFD diagrams of different mechanical ventilation<sup>224</sup>

<sup>223</sup> Wong, N.h, J. Song, and A.d. Istiadji. "A Study of the Effectiveness of Mechanical Ventilation Systems of a Hawker Center in Singapore Using CFD Simulations." *Building and Environment* 41, no. 6 (2006): 726-33. Accessed November 15, 2015. doi:<http://dx.doi.org/10.1016/j.buildenv.2005.03.015>.

<sup>224</sup> Wong, N. H., J. Song, and A. D. Istiadji. *Airflow CFD Diagrams of Different Mechanical Ventilation*. Singapore. In *A Study of the Effectiveness of Mechanical Ventilation Systems of a Hawker Center in Singapore Using CFD Simulations*. 6th ed. Vol. 41. Building and Environment. 2006.

The announcement by the NEA in October 2011 that 10 new hawker centres would be constructed by 2021 called for a need in defining the planning and design guidelines for a program that has primarily been concerned with new development and a once prolific unemployed workforce in a Singapore that is very different today. In November of that same year, the Hawker Centres Public Consultation Panel convened to discuss recommendations for the future of hawker centre design and practices. Constructed of 19 experts in architecture, environmental sustainability, social enterprise and food and beverage management, the panel released their recommendations in February 2012 in an official report outlining key practices that should be noted in developing hawker centres in a contemporary Singapore. After meeting with hawkers and members of the public, the panels recommendation to the government begin with three key principles,<sup>225</sup>

1. The community should derive maximum benefit from the centre.
2. The centre should provide opportunities for employment.
3. The centre could provide a platform for enterprising individuals to enter the food industry.

Divided into three sections, Management Model, Design and Vibrancy, the report describes fundamental ideals that should inform on the development of future centres. Within design, the panel discusses the opportunity for hawker centres to “showcase efficiency in the use and management of limited resources and should also promote environmental efficiency.”<sup>226</sup> The utilization of efficient practices and systems such as natural ventilation and lighting, recycling facilities and green features such as roof

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<sup>225</sup> Ministry of the Environment and Water Resources, Hawker Centres Public Consultation Panel. “Recommendation Report of Hawker Centres Public Consultation Panel.” Singapore. 2012. Accessed November 12, 2015.  
<http://app.mewr.gov.sg/data/ImgCont/1655/PCP%Recommendation%Report.pdf>

<sup>226</sup> Ibid

gardens and bio swales. Design, layout and programming should encourage an eco-sensitive utilization of the spaces provided.<sup>227</sup>

#### **2.3.4 A Hawker Typology for a Developed Nation**

In June 2012, the announcement by the NEA that the newest centre in Bukit Panjang would be designed by an international competition opened the door for foreign architects to participate in the future of hawker centre design. After narrowing the participants into 5 finalists, the competition introduced the NEA to a new typology of hawker centres, diverging from typical models of design practiced in the past. These designs offered Singapore a product of formal expression as they took on a more aesthetic approach to layout and organization. Also of difference was the particular reverence given to the automobile.

Near to an MRT station, the Bukit Panjang Food Centre, as well as many of the newest centres, features a multistory mixed-use building that incorporates retail, food and community programming. The new formal expression and organization is so starkly different than previous examples of hawker architecture that one could question is this really what a hawker centre is supposed to be? Much of the conceptualized designs give little reverence to the hawker stall, in fact limiting the capabilities of the centre and its prospective users. Of the three chosen, the winning design proved to exhibit the most practical use of space over the strict formalism and monumentality of the runner-ups (see figure 29)

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<sup>227</sup> Ibid



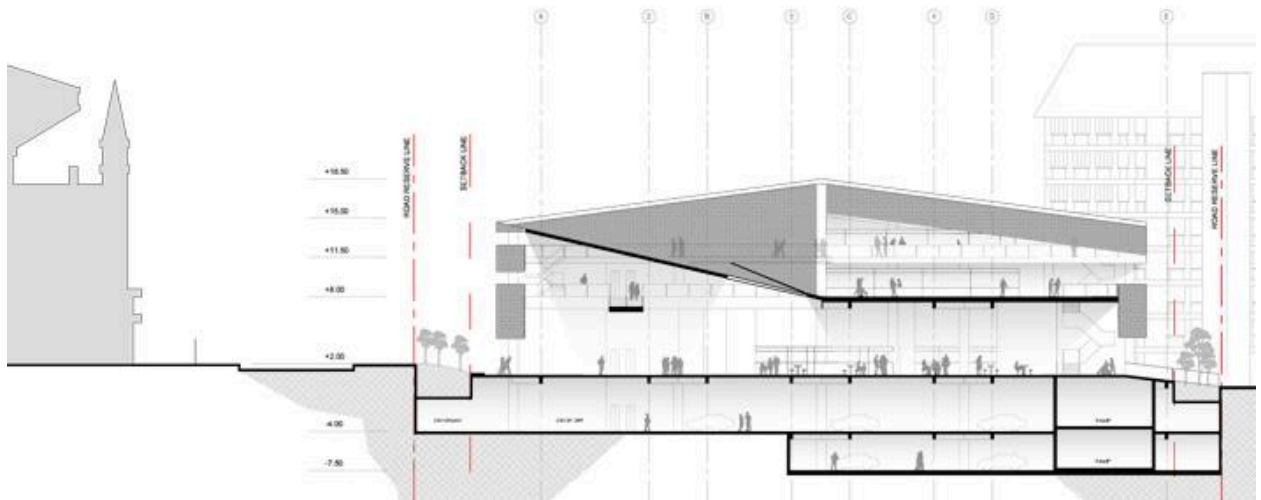


Figure 28: Materium Architects, 3rd Place<sup>228</sup>

<sup>228</sup> Materium. *Bukit Panjang Food Center Competition Submission*. November 24, 2012. Singapore. Accessed August 23, 2015. <http://www.archdaily.com/295042/bukit-panjang-hawker-center-international-competition-entry-materium>.





Figure 29: Winning Design<sup>229</sup>

<sup>229</sup> Bukit Panjang Winning Design. Singapore. Accessed November 11, 2015.  
<http://www.straitstimes.com/singapore/new-bukit-panjang-hawker-centre-breaks-ground-to-serve-up-affordable-food-in-2015>.

SPARK architects have also, in July 2014, unveiled a concept for a floating Hawker that could travel the various water ways and reservoirs of Singapore (see figure\*\*\*). However, again the question can be asked how is this representative of a hawker centre? The entire purpose of the Hawker centre is to provide affordable working conditions so the hawker can in turn supply food at affordable prices. The pods utilized as rafts limit the growth of the centre and effectively trap customers on them if they decide to move while occupied. However, the openness of Singapore to look at these designs and take something away from them as they move forward in history is an important step if working towards greater goals.



Figure 30: SPARK Floating Hawker Pods Concept<sup>230</sup>

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<sup>230</sup> SPARK Architects. *New Hawker Centre Typology Proposal*. Singapore. Accessed November 12, 2015. <http://www.architectureforfuture.com/spark-plans-sustainable-floating-hawker-for-singapore/>.

## 2.4 Hawker Business Models

Hawker food is cheap. But how can a plate of noodles retail for S\$3-S\$4.50 and a rice plate retail for S\$1.20-S\$2.50 a plate? A recent survey of significant cost components affecting hawker food prices found that the average hawker spends 59 percent of monthly expenditures on materials, 17 percent on manpower, and 12 percent on rental fees (unsubsidized stalls). The remaining 12 percent is split into utilities (9 percent) and table cleaning services or other miscellaneous operating costs (3 percent).<sup>231</sup> Accounting for about half of the currently 5,500 rental cooked food stalls, government subsidization to owners has kept a monthly average rental cost of S\$200. When compared to S\$1250 for unsubsidized stalls, subsidized stalls showed to have a monthly operating cost of S\$8000 versus S\$9,200 for unsubsidized stalls.<sup>232</sup> However price differences in products served are not typically determined by their costs, but “what the market can bare.”<sup>233</sup>

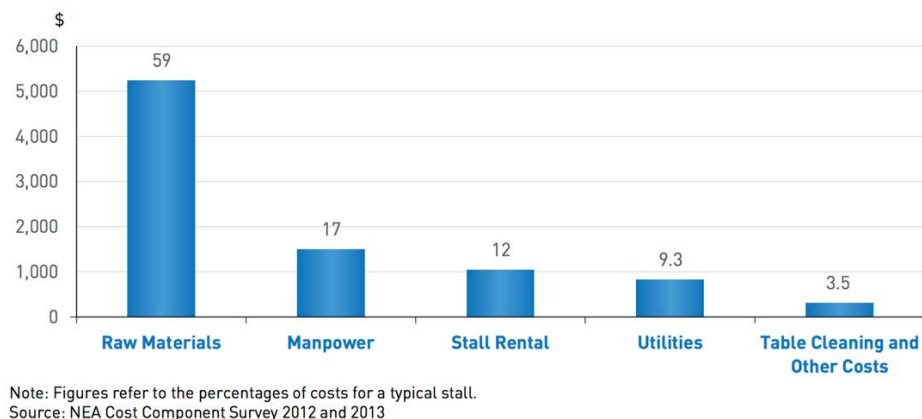


Figure 31: Monthly Hawker Expenditures<sup>234</sup>

<sup>231</sup> Hong, Leong Chi, Jamie Poh, and Regina Ng. "Examining the Cost Drivers of Hawker Food Prices." *Economic Survey of Singapore First Quarter 2015*, 2015, 38-41. Pp. 39

<sup>232</sup> Ibid, pp. 43

<sup>233</sup> Ibid

<sup>234</sup> Hong, Leong Chi. *Monthly Hawker Expenditures*. Singapore. In *Examining the Cost Drivers of Hawker Food Prices*. Economic Survey of Singapore. 2015.

That being said, prices of food are not determined by the cost of the stall rental but rather the cost of materials. A 1 percent increase in material cost saw the greatest change in food prices by +.56 percent, where as a 1 percent increase in rental rates accounted for a .03 percent price change.<sup>235</sup> That means that a rental rate increase of 10 percent would only account for a 3 percent price change to consumers (S\$2.50 to S\$2.58). However, when paired with similar stalls that sell similar food product, on average a price decrease of 8.4 percent was seen in response to direct competition.<sup>236</sup> Rent did however effect personal income factors, where stalls running under subsidized rentals retain the money that would otherwise be spent on rent. In an interview article on hawker incomes by Ryan Ong, his findings suggest that the average hawker income is anywhere between S\$3,000 –S\$7,000 a month with some individuals reporting monthly incomes of S\$12-40,000 if the stall is famous enough to demand higher attendance by patrons.<sup>237</sup>

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<sup>235</sup> Ibid, pp.39

<sup>236</sup> Ibid

<sup>237</sup> Ong, Ryan. "How Much Do Hawkers Really Make?" Yahoo Singapore Finance. December 2, 2011. Accessed November 26, 2015. <https://sg.finance.yahoo.com/news/much-hawkers-really-160000394.html>.





Figure 32: Tian Tian Chicken Rice Line, Maxwell Centre CBD<sup>238</sup>

Location tends to be of greatest influence in hawker profit and hawker operation. Central business district centres demand the highest rent in the nation, with some stalls renting for as high as S\$3000-S\$4000. However typical stall rentals are decided on a market-bid method where competitive bids for stall allocation above the requested minimum are awarded to the highest bidder even at a low price.<sup>239</sup> This method has ensured an average monthly rental of less than S\$1,500 for 87% of total stallholders, including subsidized stalls. However, with subsidization being utilized among first generation hawkers and individuals that can prove significant economic hardship, the continued phasing away of such stalls is occurring as leases have begun to change hands in recent years in favor of a market based rental agreement due to retirement, death, or closure of individual stalls.

<sup>238</sup> *Tian Tian Lunchtime Rush*. January 13, 2013. Singapore. Accessed March 23, 2016.  
<http://chopinandmysaucepan.com/tian-tian-hainanese-chicken-rice-singapore>.

<sup>239</sup> "FACTSHEET: HAWKER CENTRE POLICIES." Accessed December 3, 2015.  
[http://www.news.gov.sg/public/sgpc/en/media\\_releases/agencies/nea/press\\_release/P-20120306-1/AttachmentPar/0/file/COS\\_Media\\_Factsheet\\_Hawker\\_Centres.pdf](http://www.news.gov.sg/public/sgpc/en/media_releases/agencies/nea/press_release/P-20120306-1/AttachmentPar/0/file/COS_Media_Factsheet_Hawker_Centres.pdf).

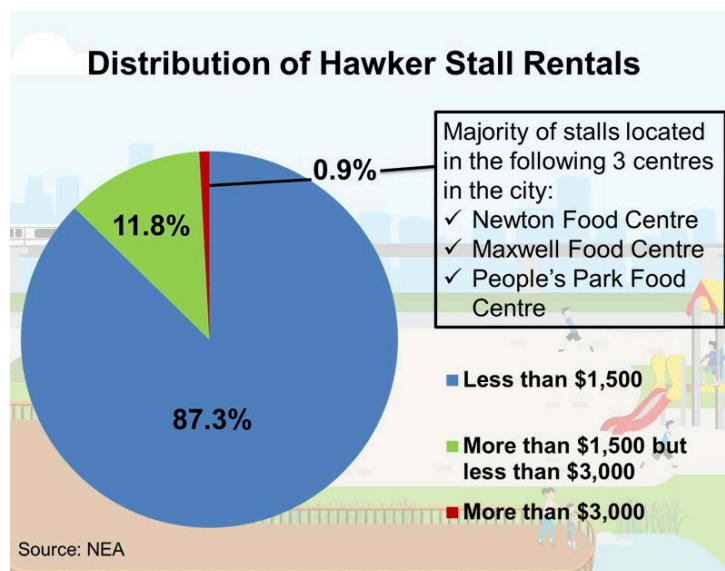


Figure 33: Average Rental Cost; NEA<sup>240</sup>

Fixed association-like fees are also associated with individual hawker centres in order to pay for communal services such as crockery collection and utilities. These differ from centre to centre as number of stalls, size of workforce, demand within centre, and other factors affect the various association costs. For example, a stall tendered in Berseh Food Centre with an area of 7.29m<sup>2</sup> (79ft<sup>2</sup>) will have an associated monthly service fee of S\$140 and a cleaning service fee of S\$549.98 whereas a 9.2m<sup>2</sup> (100ft<sup>2</sup>) stall in the popular Maxwell Food Centre will charge a service fee of S\$140 and a cleaning fee of S\$523.68.<sup>241</sup> This is typically determined by individual contract agreements between HDB hawker associations and government certified cleaning agencies. The cleaning fees are only applicable to cooked food stalls, not wet, dry or sundries market stalls.

<sup>240</sup> Hong, Leong Chi. *Monthly Hawker Rent*. Singapore. In *Examining the Cost Drivers of Hawker Food Prices*. Economic Survey of Singapore. 2015.

<sup>241</sup> "Tender Notice Table." Tender Notice Table. October 1, 2015. Accessed November 18, 2015. <http://www.nea.gov.sg/services-forms/tender-notice>.

Location of Hawker Centre	Stall Number			Approx. Stall Area (m <sup>2</sup> )	Current Service & Conservancy Fee (w/GST)	Current Table Cleaning Fee (w/GST)	Approved Electrical Design Load
	Previously Released with no bids	1 <sup>st</sup> Release	2 <sup>nd</sup> & Subsequent Release				
Blk 117 Aljunied Avenue 2	-	#01-70	-	6.00	\$166.00	See note 1	10 Amps
Amoy Street Food Centre (7 Maxwell Road, MND Building, Annex B)	-	#01-11	-	5.65	\$140.00	\$393.98	8 Amps
Blk 120 Bukit Merah Lane 1	-	#01-69+^	-	8.19	\$173.00	See note 1	14.87 Amps
Berseh Food Centre (166 Jalan Besar)	#01-18+^ #01-19+^	-	-	7.29	\$140.00	\$549.98	14 Amps
Blk 79 Circuit Road	-	#01-25 #01-36	-	7.10	\$166.00	See note 1	14.78 Amps
Blk 80 Circuit Road	-	#02-04+^	-	12.00	\$332.00	See note 1	10 Amps
Dunman Food Centre (271 Onan Road)	#01-02+^	#02-23	#01-01+^ #01-06+^	6.00	\$140.00	\$411.95	11 Amps
Blk 7 Empress Road	-	#01-79^ #01-88	-	7.14	\$173.50	See note 1	24.78 Amps
Blk 14 Haig Road	-	#01-07+^	-	7.08	\$166.00	See note 1	24.78 Amps
Blk 6 Jalan Bukit Merah	-	#01-103	-	5.64	\$173.00	See note 1	24.78 Amps
Maxwell Food Centre (1 Kadayanallur Street)	-	-	#01-003	9.20	140.00	\$523.68	15 Amps

Figure 34: Tender Notice; NEA October 2015

The biggest expenditure amongst all hawkers is the cost of raw materials to make their dishes. An average of S\$4560-S\$6164 is spent on food stock and other materials for serving.<sup>242</sup> Referencing the statistics mentioned in previous pages, let's assume that the average monthly expenditures increases by about S\$500, that means that the total price of a meal would only increase by S\$0.20.<sup>243</sup> Some government subsidies exist, primarily with hawkers involved in the Healthier Hawker program started in 2006. The aim of the program is to reduce unhealthy foods in hawker centres by providing healthier foods without sacrificing taste, cost, and accessibility.<sup>244</sup> Partially subsidizing healthier ingredients that may cost more than their typical unhealthy counterparts, the government has incentivized hawkers to adopt healthier ingredients at a system wide scale.<sup>245</sup> The popularity of the healthier option led to shortages in healthier choice ingredients and the

<sup>242</sup> Hong, Leong Chi, Jamie Poh, and Regina Ng. "Examining the Cost Drivers of Hawker Food Prices." Pp. 43

<sup>243</sup> Ibid. pp. 47

<sup>244</sup> Soon, Grace, Yang H. Koh, Mun L. Wong, and Pin W. Lam. *Obesity Prevention and Control Efforts in Singapore: 2008 Case Study*. Seattle, Washington: National Bureau of Asian Research, 2008.

<sup>245</sup> Ibid

testing centre that spearheaded the program saw, after 6 months, 50 percent of the rice being sold in the centre's meals were brown or brown mixed. Also, wholegrain noodles replaced typical flour or egg noodles by 70 percent.<sup>246</sup> Reports later cited that business in the centre's stalls had increased by 25 percent, enticing hawkers reluctant to change in fear of losing customers.<sup>247</sup>

Despite these various costs, hawker centres across the country are able to provide affordable meals to every family in Singapore. In a country that loves food, hawkers fill that much needed gap of security that a high cost of living, limited space and an import economy can make hard even for the most responsible of spenders in the nation. However, the importance of hawker centres have expanded beyond the capacity of affordable food. They have become important centres of family, community and discussion that many fear might be lost if the new generation of Singaporeans decide to taken-for-granted the important profession.

## **2.5 Hawker Culture**

The hawker culture in Singapore is something no Singaporean may escape from. For millennials in Singapore, the image of the hawker centre has exists much like they still stand today, albeit with significant facility improvements. Stalls that have remained in operation for decades still come to mind to many who frequent the market. Hawker centres across the nation are alive with life, the sound of people chatting and most of all the smell of good food. The plethora of food to choose from is at times unnerving as a

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<sup>246</sup> World Health Organization Western Pacific Region. (undated) Making Street Food Healthier in Singapore: A Case Study. Available from: [http://www.wpro.who.int/noncommunicable\\_diseases/about/HealthierFoodCentreProgramme-Singapore.pdf](http://www.wpro.who.int/noncommunicable_diseases/about/HealthierFoodCentreProgramme-Singapore.pdf) [Accessed October 2015].

<sup>247</sup> Ibid



private battle between your senses tries to decide what meal to eat. Classics like Chicken Rice, Lor Mee and Laksa are always good options, or how about Indian Rojak and Satay? Food in hawker centres is usually cheap enough that for those who wish to indulge, the ability to buy two different plates is relatively easy.

Hawker centres are the familiar landmark many refer to when planning a meeting and have become even more important in the social realm as a community centre resource. Former NEA director Goh described the moment in the 1990's that the government realized the centres served a dual purpose, reinvigorating their interest in the betterment of ailing facilities. Due to the cultural and social significance of the centres, the NEA's official policy shifted towards the Hawker Upgrading Programme.<sup>248</sup>

However, the hawker profession was in the midst of a gradual purge as first generation hawkers either gave-up or died, leaving many stalls vacant. In response, public awareness in the importance of hawker culture and the role of the hawker in Singapore's history and existence has been emphasized. The NEA's project "Our Hawker Centres" integrates art within the centres which are drawn by children who highlight the importance of hawker centres in their lives.<sup>249</sup> Furthermore, the profession is being hit hard by a new generation of Singaporeans that do want to be hawkers, instead vying for jobs in professional fields. Although being a relatively simple job requiring little initial capital to start a business,

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<sup>248</sup> Ghani, 2011, pp. 12

<sup>249</sup> "Our Hawker Centres - A Heritage & Art Project." Our Hawker Centres - A Heritage & Art Project. Accessed November 10, 2015. <http://www.nea.gov.sg/public-health/hawker-centres/our-hawker-centres---a-heritage-art-project>.

many younger Singaporeans seem to be avoiding the industry due to “lack of opportunities for aspiring hawkers to learn how to cook and enter the business.”<sup>250</sup>

In response to the shortage a number of programs of started to address the issue at large. Street Food Pro was a subsidized programme that taught to aspiring hawkers the proper ways the run a hawker business, skills training and culturally sensitive understanding of Singapore’s food heritage.<sup>251</sup> Although most private programs were not able to sustain themselves, in 2013 the NEA, YMCA, Knight Frank, Business Times and Singapore Workforce Development Agency combined efforts to develop a “hawker master pilot training programme to train aspiring hawkers.”<sup>252</sup> The result has been in the form of a Youtube series that follows the “hawker masters” through their training with reputable stall operators across Singapore. Unfortunately funding and lack of sponsors allowed for only one round of trainees to complete the programme.

Another aspect of hawking that has pushed many away is the upfront cost, usually being around S\$18,000-S\$20,000 to secure equipment, materials and a three-month operating cost.<sup>253</sup> However, given the costs needed to start a restaurant, these upfront costs could look quiet a bit more appealing. Despite resistance in the workforce, Hawker Culture has thrives in the public sense. Of recent, much media has focused on highlighting hawkers and the food they produce. On July 7<sup>th</sup>, 2013, Michelin Star chef Gordon Ramsay was

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<sup>250</sup> "Is Singapore's Hawker Culture Faltering?" Is Singapore's Hawker Culture Faltering? October 29, 2015. Accessed December 12, 2015. <http://www.themalaymailonline.com/eat-drink/article/is-singapores-hawker-culture-faltering>.

<sup>251</sup> Ibid

<sup>252</sup> Ibid

<sup>253</sup> Ibid

invited by telecoms corporation Singtel to participate in the Hawker Heroes Challenge, where popular chefs from the most acclaimed hawker stalls went head to head in preparing traditional Singaporean Cuisine with the world renown chef.<sup>254</sup> Advertisement campaigns and multiple city-wide art installations and exhibitions continue to engage Singaporeans in remembering their hawker culture.

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<sup>254</sup> "It's Singapore vs Ramsay - The Final Cook-Off!" - Singtel. Accessed September 10, 2015.  
<http://info.singtel.com/brand/?randkey=1386053155>.



### **3 The Case for the Hawaiian Hawker**

The case for the Hawaiian Hawker stems from the need to address not just hunger for people in food-insecure households, but also provide affordable food to everyone at any level of society. Hawaii shares a special connection with Singapore in terms of similar specific conditions that can allow for the lateral interpretation of many programs and ideas. One could say that the current planning of Honolulu and outlying suburbs have not catered to the development of “public” space and social spaces that intersect with typical pathways. It is here that the critical examination of the Honolulu Hawker and its place in the community can take place.

#### **3.1.1 Landscape and Cultural Background**

Ancient Hawaiians cultivated the land in a sophisticated manner that ensured a cycle of food sustainability was met. Under this system, previous efforts estimate that nearly 1,000,000 native Hawaiians inhabited the Hawaiian Islands. This is substantial when you compare the current food and health disparities of Native Hawaiians with other ethnicities in Hawaii. The climate allows for year round cultivation without seasonal monsoons or significant threats to crops, and maximum temperature changes averaging 76-88F with a diurnal change of about 10 degrees. Cool trade winds carry moist cool air over the windward mountains creating daily showers that typically mist the valleys and urban center in a thin sheet of rain.

One could argue that the only elements that a person needs to be protected against in Hawaii is the sun and the rain. Apparent in the vernacular architecture of Hawaii, many efforts and successes have been achieved in producing an architecture that can utilize Hawaii's natural resources to maintain a level of comfort without the utilization of air conditioning or other mechanical ventilation. Vladimir Ossipoff's residences are perhaps the greatest example of modern Hawaiian architecture with a deep understanding of craft and place. His homes usually feature a long low-sloping roof with eaves that extend exceptionally far from the exterior walls. His houses tend to also feature narrow, elongated programs as to minimize obstruction of airflow across the width of the house. Walls exist only as spatial partitions, penetrated by openings or slide away to optimize the conditions for users under the roof. These forms are iconic of tropical architecture, indigenous and modern and may be seen throughout many areas of the world.

The Hale Kuke is the name of the cooking houses in traditional Hawaiian homesteads, where members of the community gather to cook the meals for the day. The process of cooking and sharing food grown with their own hands was an important and sacred aspect of Native Hawaiian culture. Currently housing project solutions are being developed to help build a stronger native community. Collaborating with the Department of Hawaiian Homelands, communal living and sharing can be returned to the Hawaiian people. Throughout the world, people can relate to the strong bonds and social customs of eating and cooking. In the case of the Honolulu Hawker, why should the design diverge from what it means to be a social human being?

### **3.1.2 Overview of Economic Conditions**

Affordability is the main cause of food insecurity in the US, in which 16 percent of Hawaii has to participate in government assistance programs. Having to import most of the state's resources, the cost for commodities and goods increases in relation to the transport and importer fees as well as market demand. Honolulu falls just behind New York City as most expensive US city to live in<sup>255</sup> and state-wide Hawaii is the most expensive before Washington D.C. and New York.<sup>256</sup> There are many similarities between Hawai'i and Singapore, as the later is also considered the most expensive city to live in.

Having been ranked world's most expensive city in 2014 and 2015 by the BBC, Singapore's cost of living outranks Paris, Oslo, Sydney and Zurich.<sup>257</sup> When vetting datasheets of consumer reported costs on different goods, and completing a SGD to USD conversion, the cost of many of the items reported were comparable or differs slightly. Figure \*\*\* (in appendix) compares the various costs of living in each setting. A carton of 12 eggs was reported being \$4.15<sup>258</sup> in Hawaii, which is over half of the SNAP daily allowance. The alternative, in order to avoid high costs of grocery stores, is to buy into fast food, which for students and families with little time on hand seems like a more convenient option. According to Pacific Business News, as of March 2015 McDonalds

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<sup>255</sup> "10 Most Expensive Cities in America." CBSNews. Accessed November 18, 2015.  
<http://www.cbsnews.com/pictures/10-most-expensive-cities-in-america/4/>.

<sup>256</sup> Erika Rawes, Wall St. Chet Sheet. "7 Most Expensive States to Live in the U.S." USA Today. September 13, 2014. Accessed November 18, 2015.  
<http://www.usatoday.com/story/money/personalfinance/2014/09/13/cheat-sheet-most-expensive-states/15455129/>.

<sup>257</sup> "Singapore World's Most Expensive City to Live in - BBC News." BBC News. Accessed November 18, 2015. <http://www.bbc.com/news/world-asia-31704392>.

<sup>258</sup> Appendix

operated a total of 76 locations across the state.<sup>259</sup> This may be one fast food chain, yet the numbers are remarkable considering the size of Hawai‘i and the number of other fast food companies that have a presence in the state.

They are, however credited for employing over 4,600 workers statewide, adding much needed jobs and income to various populations.<sup>260</sup> According to the United States Department of Labor, Hawai‘i fared well through the economic crisis of 2008, which saw record number unemployment rates across the U.S. in decades. Consistently the rate has been significantly lower than the national average, peaking at 7.3% in 2009 and steadily decreasing to 3.2% in November of 2015.<sup>261</sup> The U.S., in comparison, peaked at 10% in 2009 with latest data from December 2015 showing a decrease to 5%.<sup>262</sup> However, the average weekly earnings for Hawai‘i, according to the Bureau of Labor Statistics in the first quarter of 2015, was \$881 (\$918 for the City and County of Honolulu) or \$147 less than the national average of \$1,048.<sup>263</sup> Hawai‘i ranks 31 nationally in comparison to each state and territory in the Union on weekly wage income.

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<sup>259</sup> Gill, Lorin Eleni. "McDonald's Reaches 76 Restaurants in Hawaii with Openings on Maui, Kauai, Oahu - Pacific Business News." Pacific Business News. March 25, 2015. Accessed March 24, 2016. <http://www.bizjournals.com/pacific/news/2015/03/25/mcdonalds-reaches-76-restaurants-in-hawaii-with.html>.

<sup>260</sup> Ibid

<sup>261</sup> US Department of Labor. Bureau of Labor and Statistics. "REGIONAL AND STATE EMPLOYMENT AND UNEMPLOYMENT — JANUARY 2016." News release, March 14, 2016. Accessed March 20, 2016. <http://www.bls.gov/news.release/pdf/laus.pdf>.

<sup>262</sup> Ibid

<sup>263</sup> US Department of Labor. Bureau of Labor and Statistics. "County Employment and Wages in Hawaii – First Quarter 2015." News release, October 38, 2015. Accessed March 20, 2016. [http://www.bls.gov/regions/west/news-release/pdf/countyemploymentandwages\\_hawaii.pdf](http://www.bls.gov/regions/west/news-release/pdf/countyemploymentandwages_hawaii.pdf).



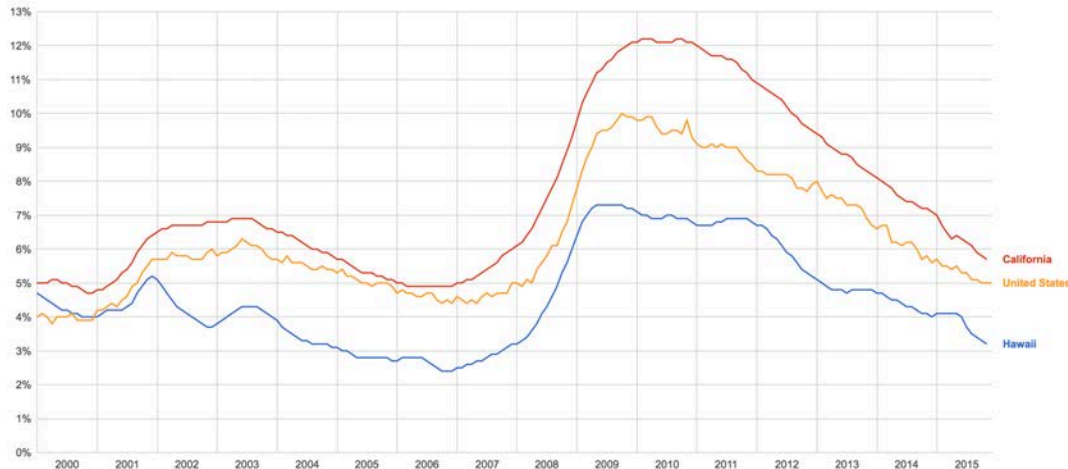


Figure 35: Unemployment Rate in Hawai'i, California and the U.S. 2000-2016; Google Public Data Graph<sup>264</sup>

For the 21,600 unemployed<sup>265</sup>, as well as those employed and wishing for a change, persons in Hawai'i, multiple programs, agencies and resources are available for persons seeking work. The State of Hawai'i Workforce Development Division offers a number of services that aim at assisting laid-off, first-time job seekers and people wishing to gain more skills to assist in gaining a promotion. These programs often link other assistance programs, funds and government departments such as Veterans Affairs to cater to a wider demographic. On its website, one can search for job postings via HireNet Hawai'i, apply for apprenticeships and employment training, help find jobs for seniors, find assistance in taking on a career shift and find volunteer opportunities.<sup>266</sup> Like-wise, the Department of Labor and Industrial Relations (DLIR) utilizes the Kumu A'o program to connect eligible

<sup>264</sup> "Unemployment Rate." Digital image. Accessed March 20, 2016.  
[https://www.google.com/publicdata/explore?ds=z1ebjpgk2654c1\\_&met\\_y=unemployment\\_rate&idim=state:ST1500000000000:ST0200000000000&fdim\\_y=seasonality:S&hl=en&dl=en#!ctype=l&strail=false&bcs=d&nselm=h&met\\_y=unemployment\\_rate&fdim\\_y=seasonality:S&scale\\_y=lin&ind\\_y=false&rdim=country&idim=country:US&idim=state:ST1500000000000:ST0600000000000&ifdim=country&tstart=948708000000&tend=1450951200000&hl=en\\_US&dl=en&ind=false](https://www.google.com/publicdata/explore?ds=z1ebjpgk2654c1_&met_y=unemployment_rate&idim=state:ST1500000000000:ST0200000000000&fdim_y=seasonality:S&hl=en&dl=en#!ctype=l&strail=false&bcs=d&nselm=h&met_y=unemployment_rate&fdim_y=seasonality:S&scale_y=lin&ind_y=false&rdim=country&idim=country:US&idim=state:ST1500000000000:ST0600000000000&ifdim=country&tstart=948708000000&tend=1450951200000&hl=en_US&dl=en&ind=false)

<sup>265</sup> US Department of Labor. Bureau of Labor and Statistics. "REGIONAL AND STATE EMPLOYMENT AND UNEMPLOYMENT — JANUARY 2016."

<sup>266</sup> "Workforce Development Division." Workforce Development Division. Accessed March 25, 2016.  
<http://labor.hawaii.gov/wdd/home/job-seekers/>.

persons to 1,569 eligible training providers (ETP) which can be funded by the federal Workforce Investment Act (WIA) of 1998.<sup>267</sup>

On the federal level, the Department of Labor sponsors CareerOneStop.org, which acts as a one-stop resource for people in need of employment assistance can find housing assistance, COBRA healthcare insurance and job searches or training.<sup>268</sup> This program has worked with the DLIR to create One-Stop Centres across the state that collaborates with Career Kokua, Hawai'i Workforce Infonet, HireNet Hawai'i, MySkills MyFuture and Veteran Employment Training Services all free of charge.<sup>269</sup> Non-profit organizations like Goodwill also strive to help disadvantaged persons with barriers in seeking employment and job training. Their Office of Community Services provides training, search assistance and case management to persons over 18 years of age and meet the 150% FPL cutoff.<sup>270</sup> This organization caters services to low-income individuals, Native Hawaiians (Hawai'i Island only), reintegrating individuals and immigrant integration services. Yet, these programs as a whole act as a resource for persons to rely on employment in other employers, requiring a great deal of motivation and effort from all participants in the program (employer, employee and agency). Job

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<sup>267</sup> "Find Job Training Programs in Hawai'i." Kumu A'o. Accessed March 25, 2016.  
<http://dlir.state.hi.us/labor/etp/>.

<sup>268</sup> "CareerOneStop ReEmployment Portal - Hawaii Worker Reemployment Resources."  
CareerOneStop.org. Accessed March 20, 2016.  
<http://www.careeronestop.org/reemployment/morebenefitsandassistance/stateresource/hawaiistateresources.aspx>.

<sup>269</sup> Department of Labor and Industrial Relations, Workforce Development Division. *Hawai'i Workforce Network: One-Stop Centers*. 2015. Accessed March 20, 2016.  
<http://labor.hawaii.gov/wdd/files/2013/05/One-Stop-Centers-January-2015.pdf>.

<sup>270</sup> Goodwill Industries of Hawaii, Inc. *Job Connections*. Accessed March 20, 2016.  
<http://www.higoodwill.org/wp-content/uploads/2015/09/Job-Connections-Brochure.pdf>.

placement programs in Hawai‘i are largely private corporations that recruit participating job seekers and assign them to various employers who have taken part in their program, yet none of the programs discussed thus far seek to empower the individual to seek employment by starting their own business. Is that not the foundation of the American dream?

Starting a business requires significant initial investment with both time and money. In addition to this investment, know-how in legal processes, tax preparation and other required processes for creating and managing a small business further burden the individual and act as a deterrent for many disadvantaged groups. If the prospective entrepreneur completes a business plan, many are forced to look towards banks and lenders as sources of capital to start the business. Other sources of funding are hard to locate and typically not advertised on government websites and resources. Grants for small business owners do exist, as a number of websites and programs highlight. The Office of Hawaiian Affairs (OHA) advertises its Hi‘ilei Aloha grant program for Native Hawaiian communities to access resources for capacity building in various business types. Their website helps breakdown the process of ownership and operations by providing a step-by-step process from starting a business and directs the user to a website that offers an outlook for all current and upcoming grants through its Ha‘awina Kāko‘o Grant(s) former platform.<sup>271</sup> However, this list of grants produces a list of federally and privately funded grants that have little to do with entrepreneurial start-ups and business funding. A few examples of grants displayed are funded by the USDA and US

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<sup>271</sup> "Capacity-Building for Small Businesses." Hi‘ilei Aloha. Accessed March 20, 2016.  
<http://www.hiilei.org/Na-Kumu-Waiwai-Kokua-Nui/Capacity-Building-for-Small-Businesses>.

Department of Justice that specify that programs awarded funding must address issues like sexual assault violence and institutional research in order to be applicable.<sup>272</sup> Other resources for grants exist for many groups and minorities, but again, the burden of applying to grants and fulfilling their requirements and conditions is often outside of the interest or capabilities for most business owners.

Utilizing a system of job placement in a hawker centre system has the ability to serve multiple applications. The unemployed individual not only becomes employed, but a small business owner. The costs associated with subsidizing the start-up could potentially be less than the continued support of the person under current unemployment insurance programs and other job assistance programs. The new hawker also fulfills a role as a valuable food resource for communities and creates a more diverse local economic structure for food service and agricultural providers.

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<sup>272</sup> Hi'ilei LLC. *Upcoming Grant Opportunities*. PDF. February 16, 2016.

## **3.2 The Hawaiian Hawker**

The following section will investigate the stage for hawkers to become integrated into the food service fabric of Hawai‘i and their relevance in the overall culture of the population. Investigating current and former models of food access during times of strife, success and movement into the future, the validation for the relevance of the role the hawker can play in the community may be made. Reinvigorating images of communities, traditions and the realization of the “American Dream” opportunities for growth and the areas to improve upon will help to identify how the hawker will reinforce community resilience and food equity.

### **3.2.1 History Revisited**

Long forgotten in the history of Hawai‘i is the role of the hawker in securing for generations two of Hawai‘i’s most famous and treasured foods; the Manapua and Saimin. Saimin, or “sai men,” is a term that is particular to Hawai‘i and often refers to a number of different noodle dishes that developed in the state from the mix of Asian immigrants that came to the state in the late 19th century. Although widely available today in chain restaurants such as Zippy’s and McDonald’s, the origins of the local favorite comes from the windows of saimin stalls that populated the suburbs of Honolulu in the 1930’s (at this time the stretch of land from University Avenue to Kahala).<sup>273</sup> The quick preparation and simple ingredients of the dish easily made the dish a neighborhood commodity as

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<sup>273</sup> Laudan, Rachel. *The Food of Paradise: Exploring Hawaii's Culinary Heritage*. Honolulu: University of Hawai'i Press, 1996. pg 51

Rachel Lauden describes in her take on food heritage in Hawai'i, "a saimin stand is where you go to warm up when the temperature sinks into the 60s, to pass the time after a movie, to seek an acceptable haven away from the bosom of the family, or simply to get a great snack."<sup>274</sup> This could be considered similar to the appeal of a Kopitiam in Singapore, a coffee and snack shop that operates similarly to a hawker but on a larger scale. Hamura Saimin Stand in Lihue, Kauai was given recognition in 2006 by the James Beard Foundation for being a beloved asset within the community and contributing to the continuation of an "American Classic."<sup>275</sup>



Figure 36: Saimin and Terri-stick<sup>276</sup>

Manapua also appears to have had origins in the later half of the 19th century as Chinese immigrants came to work on the plantations. Similar to the story of the hawkers of Singapore, unemployment and lack of professional skills forced many Chinese immigrants to walk the streets of the various towns and camps of Honolulu as food peddlers.<sup>277</sup> In Cantonese, *cha siu bao* (叉燒包) literally translates to "roast pork bun."

<sup>274</sup> Ibid, pg 52

<sup>275</sup> Toth, Catherine E. "The History of Five Local Grinds." Hawaii Magazine. 2015. Accessed February 20, 2016. <http://www.hawaiimagazine.com/content/history-five-local-grinds>.

<sup>276</sup> *Saimin and Terri-stick with Menu*. Honolulu. Accessed March 23, 2016. <http://tastyislandhawaii.com/2011/07/09/kalihi-eats-palace-saimin/>.

<sup>277</sup> Ibid

The term “Manapua” has a number of perceived origins, with common belief explaining that it is derived from Hawaiian *mea ono pua‘a* (pork pastry) or *muana pua‘a* (mountain of pork).<sup>278</sup> These foot peddlers would hawk through the community donning large aluminum cans of manapua hanging from a simple pole or yoke worn about the shoulders. Their popularity became so recognizable, they eventually obtained the nickname, “Manapua Man.”<sup>279</sup> Since their days as hawkers, the image of the traveling manapua man walking around a community is long gone, replaced instead with Manapua Man food trucks, offering a breadth of cheap foods and snacks. It is described in the video documentary, “Chasing the Manapua Man,” that a relationship between the food truck and the community it services is integral, with several eager and loyal customers knowing where and when the truck will stop in certain places.<sup>280</sup>



Figure 37: The Original Manapua Man (Right)<sup>281</sup>, Height of Manapua Trucks (Left)<sup>282</sup>

<sup>278</sup> Ibid

<sup>279</sup> Lauden, Rachel. *The Food Paradise*. pg 52

<sup>280</sup> “Chasing the Manapua Man: The Hawaii Icon. Produced by Moanalua HS. Honolulu: MeneMAC, 2014. Short Film. April 8, 2014. Accessed September 5, 2015. <https://www.youtube.com/watch?v=rAa0aGv3b-Q>.

<sup>281</sup> *Original Manapua Man*. Honolulu. Accessed March 23, 2016.

<http://tastyislandhawaii.com/2014/11/13/da-manapua-man-time-machine/>.

<sup>282</sup> *A Manapua Truck*. Honolulu. Accessed March 23, 2016. <http://eatthestreethawaii.com/decades-of-food-truck-history-in-hawaii/>.



Figure 38: Modern Manapua Truck<sup>283</sup>

Like much of the United States, the adoption of the automobile also had an effect of the manapua man. Early manapua men operated out of large vans and began targeting high traffic locations such as beaches, parks, business districts and small communities. They are the Hawaiian contemporaries to the “Ice Cream Man”, however the numbers of vendors are only a handful of trucks spread thinly across a scattered neighborhoods.<sup>284</sup> However, the presence of Food Trucks across the nation has exploded in recent years, as the risk-cost assessment of entering the food business seems to favor the food truck venture over entering directly into a brick-and-mortar restaurant. Forbes reported that in 2009 the annual growth of the food truck industry was at 8.4% annually and placed an annual revenue for that year at \$1.2 billion dollars.<sup>285</sup>

<sup>283</sup> R, Angela. *Modern Manapua Truck*. Pearl City. Accessed March 23, 2016.

[http://www.yelp.com/biz\\_photos/manapua-man-pearl-city?select=rRbp-Jt2hu6CejuJFSaFIQ](http://www.yelp.com/biz_photos/manapua-man-pearl-city?select=rRbp-Jt2hu6CejuJFSaFIQ).

<sup>284</sup> "Eat The Street Hawaii | Decades of Food Truck History in Hawaii." Eat The Street Hawaii. Accessed February 15, 2016. <http://eatthestreethawaii.com/decades-of-food-truck-history-in-hawaii/>.

<sup>285</sup> Investopedia. "The Cost of Starting a Food Truck." Forbes. September 27, 2012. Accessed February 20, 2016. <http://www.forbes.com/sites/investopedia/2012/09/27/the-cost-of-starting-a-food-truck/#6221a5f12930>.



The “Street Vendors in the US: Market Research Report” cited that over 15,500 businesses serve food to customers in mobile or open-air conditions.<sup>286</sup> Costs to enter the market in a physical location is typically between \$100,000 to \$300,000 on the low end as Forbes states, but in contrast, the cost to purchase a food truck will cost as low as \$50,000 for a reasonably reliable and good condition truck. But it also points out that other factors that need to be considered is the cost of fuel, maintenance, permits, equipment, food supplies, insurance, advertising and employee pay.<sup>287</sup> Althoughn comparatively low to the expenses of a brick-and-mortar restaurant, the costs are rather hard to swallow for a first time business owner that statistics .

A number of food trucks have reached popularity in Hawai‘i and offer specialty or gourmet foods at various locations throughout the community. A criticism of these operators could be the high cost of foods they charge. Ideally the concept of building a restaurant on wheels and taking it to communities that lack the diversity of foods to create a healthy eating and social environment appears to be a marvelous idea. Meals on Wheels is a charity organization that helps deliver hot and nutritious food to the elderly and people with dissabilities, yet their door-to-door service costs \$12.49 per meal and limits social interaction to the few moments the deliverer has when the recipient recieves their meal.<sup>288</sup> The heart and morals of the services are clearly present, but the economics of the bussiness are hard to swallow. However, back to the subject of the food trucks,

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<sup>286</sup> Ibid

<sup>287</sup> Ibid

<sup>288</sup> "Areas We Serve." Hawaii Meals on Wheels. Accessed March 25, 2016. <http://hmow.org/areas-we-serve/>.

more and more of these suppliers are becoming boutique kitchens with prices that exclude many from the the local communities they serve from participating.



Figure 39: Makers & Tasters at Kewalo Basin<sup>289</sup>

For permanent installations such as Kaka‘ako’s Makers & Tasters feature ‘craft’ meals can cost upwards of \$10 or more for cooked food. Yelp reviews of the cost cite \$10 for tea in a mason jar (\$7 for lemonade), \$17 for a mini lobster sandwich, \$9 for three fish tacos and many other high costs for food the markets itself as a grassroots effort to make good food available for everyone. The creativity and success of these trucks are commendable, but the demographic that the market’s vision tries to reach out to by being “inviting and accessible to the community” cannot afford to participate.<sup>290</sup> For many of the trucks that do service underprivileged communities and low-SES populations, they operate at maximum profit by providing food made from less healthy or preprocessed

<sup>289</sup> *Ten-Eleven Bar Opens*. Honolulu. Accessed March 23, 2016. <http://www.kauaitips.com/ten-eleven-bar-opens-on-kakaako-waterfront/>.

<sup>290</sup> "MakerStations." Makers Tasters. Accessed February 15, 2016. <http://makersandtasters.com/vision/>.

ingredients (think the ice cream truck). Perhaps the overhead cost of operating a food truck is still too high to gain significant profit in a state such as Hawai‘i when prices are offered at lower rates.

### **3.2.2 Brick-and-Mortar: An interview with a restaurant connoisseur**

The desire for new entrepreneurs to begin operations in a rentable space with a permanent location harkens to many ideals found within the American Dream. The ownership of one's shop and freedom to make one's own decision to earn as much as you are willing to work for are very enticing ideals that have empowered many people across the nation. However, H.G. Parsa, associate professor of hospitality management at Ohio State University concluded that within a three-year period (1996-99) a total of 57-61% of new and existing restaurants failed, with 26% occurring in the first year.<sup>291</sup> The initial investment needed to participate in the brick-and-mortar industry is significantly higher and include higher operating costs versus that of a food truck. The benefit of a restaurant space, though, is that customers will always know where to find your business.

The immensity of the work required to start a restaurant had not been realized until I interviewed a newly established restaurant owner about his experiences.<sup>292</sup> The interview lasted for approximately one-hour and consisted of a Question and Answer section, Discussion and Design Exercise. The information received proved valuable in exposing

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<sup>291</sup> Grabmeier, Jeff. "Restaurant Failure Rate Much Lower Than Commonly Assumed, Study Finds." Research News Ohio State University. September 8, 2003. Accessed February 20, 2016. <http://researchnews.osu.edu/archive/restfail.htm>.

Interviewing OSU hospitality professor and researcher H.G. Parsa

<sup>292</sup> The interview document can be found in Appendix \*\*\*

and determining appropriate responses to many factors related to the opening and operating of brick-and-mortar restaurants. For anonymity, the interviewee will be referred to as John.

Of first interest to me was how John had come to the conclusion that he wanted to help open a restaurant and the difficulties he underwent to get to opening day. While having a background in food preparation, John's brother urged him to move from New Hampshire to help him open a fast-casual Tex-Mex restaurant. Partly because of passion for Tex-Mex food, much of their decision came from basic market analysis and an understanding of their potential niche in the local market. Originally the restaurant was conceived of being much smaller, but now the flagship location has 15 employees with a second location opening in the near future. He had said that opening the business was one of the most difficult things he has done, "there are just so many unseen details and man hours needed to make sure everything operates smoothly before opening."<sup>293</sup>

To procure a functioning restaurant, John and his brother had to shop around neighborhoods for the right space with a realtor until finding their current 800 square foot shop. The shop used to be an Asian food restaurant and is currently rented to the brothers for \$4,000 as is. The shop needed to be updated to reflect the Tex-Mex style of their concept and additional equipment was needed. New refrigerators, grills and storage equipment needed to be purchased and upgraded. All of the remodeling was completed by the brothers including building new tables, installation of the front of house serving area, repainting, upgrading of lights and light demolition. This cost came at the expense of the

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<sup>293</sup> Author interview with anonymous restaurant owner, January 17th 2015

brothers even before they started making money. John mentioned that although much work needed to be done, the business operated by investment of their personal money and loans taken from the bank to procure the necessary facilities, materials and systems to get the business running.<sup>294</sup>

The interview then began to ask questions regarding operation. In context, this is the point where we ask what happens after opening day. Where did all of the money go and how does it affect the cost of food on the menu. The overhead in a brick-and-mortar restaurant is greatest in the cost of wages to employees. In his particular example, the overhead cost generated by employees exceeded the cost of materials for the month. At face value, rent only affected the overhead marginally (John said it was about 10% of total overhead), which can be observed in the Singapore hawker model as well. When asked about how this affects the cost of the food to the consumer, John responded, “we decide the cost of our food by the ‘rule of thirds,’ which to my knowledge is pretty standard. That is one third for materials, one third for employees and a third for profit.”<sup>295</sup> However, he mentioned that if the product you are serving is unique or has some sort of novelty, then the cost can increase according to demand which leads to greater profit. He stressed first and foremost that scheduling, training and productivity of workers is the most difficult part of his work. Their time cuts into the overhead of the restaurant where scheduling and training of employees are essentially taken at a loss for the time it takes to manage the team.<sup>296</sup>

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<sup>294</sup> Ibid

<sup>295</sup> Ibid

<sup>296</sup> Ibid

Materials makes up another third of the cost of a product and an increase in the cost of raw materials was proven to affect the consumer cost in the Singapore model. Fortunately, John and his brother had made an extended effort to source as much of their ingredients from local suppliers. The deals negotiated worked fine until John's restaurant became more popular than projected. This is where they met a barrier that forced them to transition from grass fed Big Island cattle to imported beef from the continental U.S. The suppliers for many of their products simply cannot meet the demand or are restricted from doing so by FDA and local regulations. Similarly, I asked if he ever considered growing a chef's garden to use in the restaurant. Understanding that his urban storefront lacked the ability to grow many plants if at all, he agreed and directed the response to talking about how small backyard farmers always walk into the store and try and sell them their excess avocados and other commonly grown fruit and produce. Although he would prefer to purchase these products from smaller farmers, John is restricted in buying unprocessed produce to ensure consistent quality and safety.<sup>297</sup>

Here is where the industry clashes with policy head-on. The social movements that are driving the eat local campaigns are pressuring food industry providers to include more local produce, but policy has not caught up to allow wholesalers and retailers the ability to provide sufficient produce according to demand. In fact, the trend works to only drive prices up. John was careful to explain that his restaurant has tried to work with healthier ingredients to try and entice the health conscious consumer, but he fears that not only would the cost increase for the meal, but the image of his tex-mex grill may be tarnished by including ingredients that do not traditionally fit in that food category. However, he

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<sup>297</sup> Ibid

did express that if he had the land and was able to tend to the chefs garden, he would love incorporating the fresh ingredients into his recipies.<sup>298</sup>

The other topics we discussed were largely related to opperations and the hypothetical situation of having to work in a micro-kitchen. For their current space, John and his brother have 300ft<sup>2</sup> of the 800ft<sup>2</sup> . When asked how he felt the space felt (too big or too small), his response was that for the people working in it, they always want more room, but he considers that their kitchen is relatively large for what their competitors have. Storage is the key to a well functioning kitchen. Spread across 4 freezers, the restaurant had approximately 90 cubic feet of cold storage which ensured the restarurant that it was stocked for at least 2 days. Like-wise, most of the spices and other dry goods to be used in the food was stored of shelves within the kitchen. The most important feature of any kitchen, acording to John is counter space. However, he said a seperate room was reserved for the storage of non-food related products (ie. Napkins, dishes, utensils). John remarked, “I never thought napkins would take up so much space.”<sup>299</sup>

When posed the question of whether or not he would ever consider using a micro kitchen, John looked back with a bit of confusion. After explaining that a micro kitchen would be a condensed kitchen made with all of the neccessities for a cook, he quickly said that if given the chance he would strongly consider using one. Given his current location, he insisted that the kitchen would have to located in a busy pedestrian corridor or near a central business or shopping area with large numbers of pedestrians rather than a vehicle

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<sup>298</sup> Ibid

<sup>299</sup> Ibid

centered corridor or quieter neighborhood. John also noted that if they were available in his current position in the market, he would see a microkitchen as a means to expand the business and create satellite shops.<sup>300</sup> This notion however contradicts some of the basic foundations of the hawker center by allowing established, potentially well-off, restaurants take over hawker space instead of promoting the proliferation of home cooks throughout the various communities the centres serve. Perhaps, had a hawker centre been available when John and his brother started the business, they would have begun by testing their proof of concept prior to opening the full-fledge restaurant rather than the reverse. It should be noted from this point onward, careful planning of the hawker tenets and their application and vetting systems must promote the local home cooks rather than the corporate or well established restaurants and not serve as a satellite or second location.

### *Design Exercise*

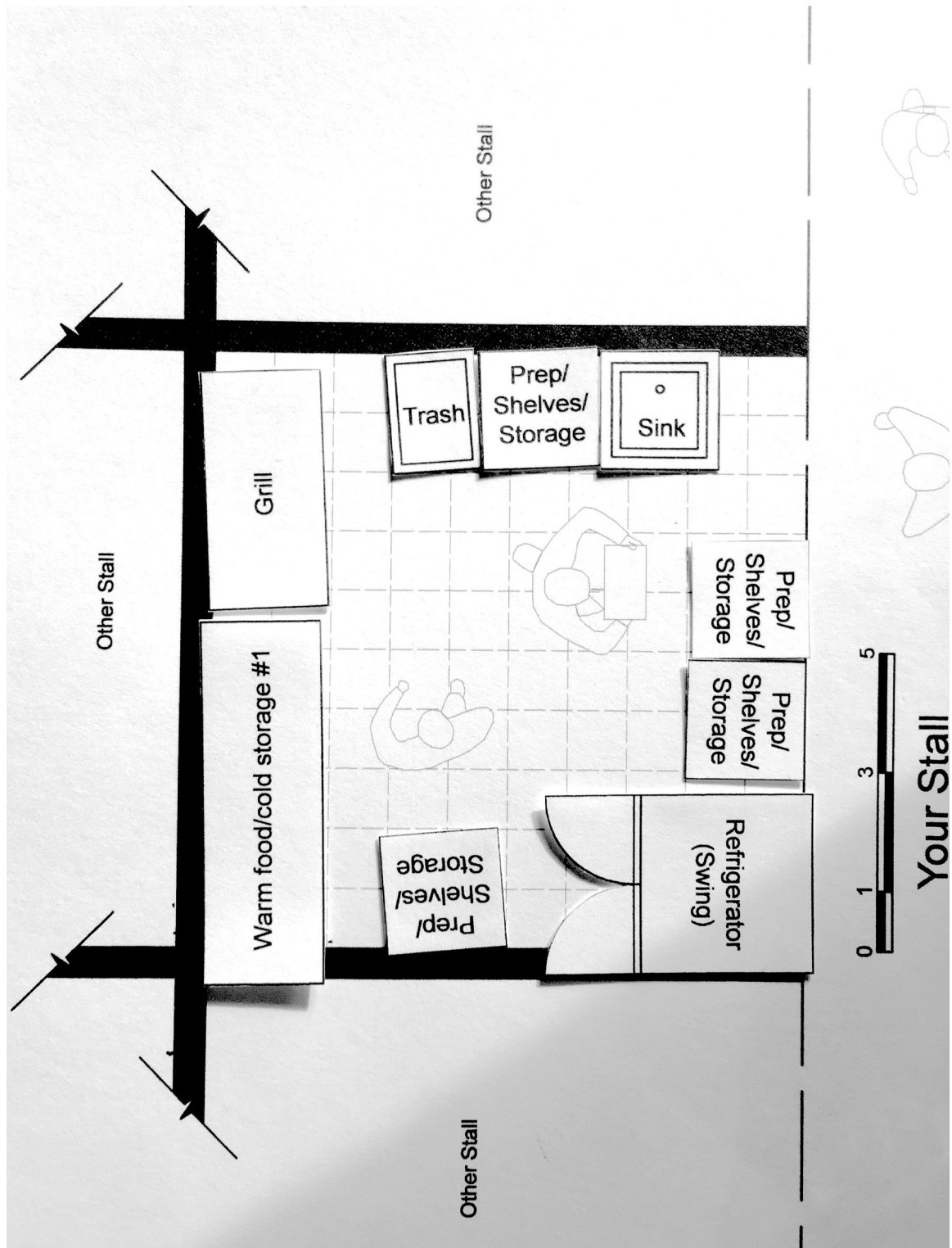
In addition to the interview, I asked John if he could complete a design exercise to aid in the visualization of what the necessary equipment and proper layout of a kitchen should look like. The exercise is valuable in defining what qualities the stall should have in the development of space programming and arrangement in the final proposal. Given the option, he chose to design a kitchen for a cooked food stall, specifically a taco stall. For the cooked food stalls, he suggested that they need to have at least some sort of small cold storage space for more immediate access to some cold materials. Near that cold storage needs to be some sort of table or counter space. He elected to sacrifice potential store front and serving space in exchange for more storage and cooking space. There should also be some sort of trash and waste space near to the cooking area as to allow the

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<sup>300</sup> Ibid



cook to quickly discard of rubbish and cooking byproduct without having to leave the grill.



Interview exercise for the design of a hawker stall kitchen. Dashed line represents store front. Author image

### **3.2.3 Other Providers of Food: Social Enterprises, Health Programs and Farmers' Markets**

Aside from purely commercial endeavors, other notable programs and organizations are aimed at providing healthy food and food education to the public such as local producers Kokua Kalihi Valley and Ma‘o Farms. Kokua Kalihi Valley (KKV) has origins in physical and dental health. Operating since 1972, the non-profit organization has provided to disenfranchised communities in Kalihi Valley medical clinics, dental clinics, refuges from abuse, crime prevention programs and a 100-acre nature reserve for the education and preservation of the land and cultural practices related to Native Hawaiian traditions.<sup>301</sup> Named Ho‘oulu ‘Āina, the mission of the KKV nature preserve community farm is to,

“Address the health needs of Kalihi Valley by strengthening the connection between people and land. Through four interwoven program areas, the community comes together to create a 100 acre upland resource of forest, food, knowledge, spirituality, and health activity.”<sup>302</sup>

Open to all people and communities, the KKV community garden teaches volunteers how to plant, grow, harvest and cook various fresh vegetables for families to take home and eat.

The farm also works in collaboration with the Roots Project, which is a farm-to-table kitchen where organic foods produced locally on the farm are prepared and sold to the

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<sup>301</sup> Kokua Kalihi Valley. "About KKV." Kokua Kalihi Valley. Accessed February 15, 2016. <http://www.kkv.net/index.php/about-kkv>.

<sup>302</sup> Kokua Kalihi Valley. "Home." Ho‘oulu ‘Āina. Accessed February 15, 2016. <http://www.hoouluaaina.com/>.

Kalihi community. Included in the program are culinary workshops, food production and a number of different shared meal programs such as cooking food in an imu, umu and omw.<sup>303</sup> Unfortunately, the café is only open from 11:00am-1:00pm on Tuesdays and Thursdays, which is during normal school and working hours.

Operating in Wai‘anae on Oahu’s Northwestern coast, another farm utilizes social enterprise to “restore our ancestral abundance- to empower our community, especially our youth, with catalytic educational and entrepreneurial opportunities... that will nurture a sustainable, resilient and just 21st century Hawai‘i.”<sup>304</sup> Interlinking economic development and education programs, the farm trains new farmers to manage, produce, process and distribute local organic produce. Being located in Wai‘anae, where food insecurity is reported as being at 33%, the farm has a goal to return self-sufficiency to the community which once was abundant in food stuffs in the history of Hawai‘i.<sup>305</sup> Highly involved in policy and social media, the farm is a voice for many agricultural producers and related businesses. Ma‘o farms is highly invested in the education and development of community youth through hands-on interaction with their program Farm-to-Fork, Youth Leadership Training and educational externships that support 4-year college degrees and future employment with various community organizations after graduation.<sup>306</sup> Ma‘o produce may be purchased through various Oahu Foodland locations, various organic groceries and health food stores, farmers markets and CSA memberships.

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<sup>303</sup> Kokua Kalihi Valley. "Returning To Our Roots." Kokua Kalihi Valley. Accessed February 15, 2016.  
<http://kkv.net/index.php/roots>.

<sup>304</sup> "Our Social Enterprise Imperative." Ma‘o Organic Farms. Accessed March 10, 2016.  
[http://maoorganicfarms.org/our\\_values](http://maoorganicfarms.org/our_values).

<sup>305</sup> Ibid

<sup>306</sup> Ibid

Likewise, a number of restaurants across the island source their produce from Ma‘o Farms, including Alan Wong’s, Roy’s Steakhouse, and Nobu Restaurant.<sup>307</sup>

In collaboration with the USDA, the leading healthcare provider for the Wai‘anae Coast area, Wai‘anae Coast Comprehensive Health Center (WCCHC), a grant was awarded to the Hawai‘i Community Resource Obesity Project to study the implementation of a program to increase healthier foods in the community and provide a series of activities to empower community members to better manage their weight and lifestyle, especially in the Native Hawaiian communities.<sup>308</sup> Spanning from February 2004 to January 2008, WCCHC used the grant to create a new dining pavilion and infrastructure to cultivate produce on site. It also established a list of community producers, large and small farms, fishermen, institutions and markets that would be interested in working with WCCHC to increase productivity and supply its dining facility with local goods and established a farmers market for the local farmers in order to generate greater profit for participants than if they were to market in urban Honolulu<sup>309</sup>. This allowed the health center to negotiate cheaper prices with farmers to reduce costs below normal retail markets. The trade-off is that the price of food is exceptionally affordable when compared to mainstream restaurants in neighboring communities and urban Honolulu.

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<sup>307</sup> "Co-Producers." Mao Organic Farms. Accessed March 10, 2016. <http://maoorganicfarms.org/co-producers>.

<sup>308</sup> Beckham, S. *Hawai‘i Community Resource Obesity Project*. Report no. 2004-35215-14238. USDA. Wai‘anae Coast Comprehensive Health Center 2004-2008 annual grant report to the USDA

<sup>309</sup> Ibid

By 2006, the WCCHC had networked with community producers to increase agricultural production from 106 purchases to 742 for the supplying of foods to the dinning pavilion.<sup>310</sup> In 2007, the CDC selected the program for funding to further develop its approach to tackling chronic disease in minority populations through its E Ola Koa program.<sup>311</sup> Their success thus far with the program and continued networking with local agriculture producers resulted in the permanent establishing of the Wai‘anae Farmers’ Market. The Hawai‘i State Department of Health agreed to allow the market to accept SNAP EBT payments provided not less than 50% of the vendors sell fresh fruits and vegetables. This existed at first as a pilot project for accepting EBT at markets across the state. Consumer research into how the market should be operated brought considerations for cooked food demonstrations, recipes on receipts and a vendor list that included fresh produce, eggs, fish, local meats and limu (a traditional Hawaiian seaweed crop which is currently fighting an invasive species).<sup>312</sup>

In Wai‘anae’s ‘country’ atmosphere, WCCHC found that picking a single location for the market was difficult, but after a year of mediocre success the market at the WCCHC location, the market moved to Wai‘anae High School. This allowed for easy access with substantial parking and resources nearby, including student vendors from the school’s own aquaculture and organic gardens.<sup>313</sup> Further assistance in the early stages of development came from Kahumana Farms and MA‘O Community Food Security

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<sup>310</sup> Ibid

<sup>311</sup> Indra, Christy, Anuenue Washburn, Shelia Beckham, Bryan Talisayan, and Desiree Hikuroa. "Home Grown: The Trials and Triumphs of Starting up a Farmers' Market in Waianae, Hawaii." In *Community Development Approaches to Improving Public Health*, by Robert S. Ogilvie, 48-59. London: Routledge, 2013. pg 51

<sup>312</sup> Ibid, pg 51

<sup>313</sup> Ibid, pg 52

Initiative, both successful organic produce farms in the community.<sup>314</sup> Analysis of community surveys in June of 2010 found that 88% of the population knew of the market's location, 89% of visitors visited at least twice a month, 55% of all purchases were through EBT and 93% said they would continue to come to the market.<sup>315</sup> It was also expressed that the consumers wanted to see more prepared foods and craft vendors.

What is remarkable about this market in particular is its resilience to pressures caused by the 'rural' environment it resided in. The first issue that plagued the market was accessibility and visibility. It was extremely important for the market to have a strong visible connection to major transportation routes. Also, the lack of public transportation to most of the community called for the need to create free shuttles and transportation to-and-from the market. The addition of a cool and comfortable environment also makes the site more hospitable to potential patrons. However, the researchers cited one of the largest factors in the promotion of the market was creative marketing. Examples include: social media, giveaways, live music, bee-keeping demonstrations, festivals, petting zoos, and vendor diversification.<sup>316</sup> In all, the survival of the market was greatly attributed to the market's ability to support local farmers, accept alternative payment methods, and involving the community in the design.<sup>317</sup>

However, not all farmers' markets have been heralded as great successes for local communities and often spark controversy in how they are operated or the businesses they

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<sup>314</sup> Ibid, pg 53

<sup>315</sup> Ibid, pg 56

<sup>316</sup> Ibid, pg 57

<sup>317</sup> Ibid, pg 58

attract. The Saturday morning Kapiolani Community College Farmers' Market has received most of the criticism as it has been inundated with tourists from nearby Waikiki. Many locals have to fight for goods and arrive before the tour busses to be able to maneuver through the crowd of people taking pictures.<sup>318</sup> Much of the controversy lies in the fairly recent rise in prepared foods in farmers' markets. As Honolulu Weekly puts it, there exists a "battle going on between those who'd like to see Hawaii farmers markets sell nothing but fresh, raw ingredients and those who think it's okay to resell imported foods."<sup>319</sup> This is derived largely from the inability for people to regulate whether or not prepared foods really did utilize local crops and ingredients in its production. At a retail rate, imported crops are less expensive and require less work by the farmer than sacrificing their own time and work done on their own crops. This could be perceived as unfair competition and counter productive to the goal of a farmers' market. Jeanne Vana, founding member of the KCC market, spoke for prepared foods as being a resource for farmers to utilize their less desirable produce and still make a profit from crop that would otherwise become compost of animal feed.<sup>320</sup> However, she held strong reservations about the prospects of mainland wholesalers entering the farmers' markets that do not require produce to be locally grown and setup "resellers who essentially pose as farmers... Market "police" can readily identify an out-of-season fruit or a vegetable from overseas, but who can say a [prepared food] vendor really used local apple bananas without a kitchen inspection?"<sup>321</sup>

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<sup>318</sup> Adams, Wanda A. "To Market But Where To?" Honolulu Weekly, October 17, 2012. Accessed March 20, 2016. <http://honoluluweekly.com/story-continued/2012/10/to-market-but-where-to/>.

<sup>319</sup> Ibid

<sup>320</sup> Ibid

<sup>321</sup> Ibid



Furthermore, careful consideration in the management of who receives a stall is key in not undermining the farmers and creating too much competition. A careful dance must be played when farmers who have built a reputation with the community are unable to appear for one or two weeks. When vendors are gone, customers notice and often complain.<sup>322</sup> This has helped to foster a unique atmosphere between markets in different locations, with customers being very different from community to community. The City and County of Honolulu operates the People's Open Markets that are typically smaller and without the 'razzle-dazzle' of markets like KCC. As part of their mandate, produce sold at these markets requires that the price be marked at least 35% lower than typical costs at retail and most, if not all of the food is unprocessed produced and seafood.<sup>323</sup> These markets tend to attract an older crowd who are purchasing their weekly vegetables. In the KCC case, the influx of tourists and complaints by local customers led to the creation of a second market day being held on Tuesday evenings, but what market organizers also suggest is that most of the problem lie in the challenges farmers face to get to market, political and economic.<sup>324</sup> The services offered need to expand beyond simply supplying a venue.

However, what are some of these barriers for locally produced foods and produce? A number of factors plague the local market, but none so much as the high cost of resources needed to produce food for consumption and the existing regulation that prohibits small farmers from interacting in the market. Policy from both the Federal and State

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<sup>322</sup> Idib

<sup>323</sup> "Types of Farmers' Markets on Oahu." Hawaii Magazine, February 2016. Accessed March 20, 2016. <http://www.honolulumagazine.com/Honolulu-Magazine/October-2008/Farm-to-Table/Types-of-Farmers-Markets-on-Oahu/>.

<sup>324</sup> Adams, Wanda A. "To Market But Where To?"

government places heavy burden on producers with steep fines and enforcement for people who do not comply with current requirements. The US FDA Food Safety Modernization Act (FSMA) identifies that new legislation pertaining to standards for growing, harvesting, packing, and holding produce for human consumption shall be recognized by all producers unless they can report an average annual value of produce sold over a three-year period be less than \$25,000, with exemptions being considered for producers averaging less than \$500,000.<sup>325</sup> The report indicates that a number of key requirements be adopted, such as the testing of water quality and utilization of agricultural grade water, extensive recordkeeping, surveys, soil studies, testing of sprouts and other mechanical and operational regulations.<sup>326</sup> Although in the best interests of public safety, these extra processes are costly and time consuming for small farmers that may negatively affect their production. There is a formal exemption process, but much of that is limited to specific crops and conditions including post-harvest processing to “kill-off” potential microbes.<sup>327</sup> Of argument is not the degree of safety that the process ensures, the act is heralded as being key to ensuring healthy food stuffs for everyone, but the regulations as to how is detrimental to small farmers. Of particular interest would be its implications for local Hawaiian farmers to continue traditional agricultural practices, which have shown to be extremely resourceful but may conflict with current FDA regulations that overrule any state or local variances on food production.

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<sup>325</sup> "U.S. Food and Drug Administration." FSMA Final Rule on Produce Safety. Accessed March 20, 2016. <http://www.fda.gov/Food/GuidanceRegulation/FSMA/ucm334114.htm>.

<sup>326</sup> Ibid

<sup>327</sup> Ibid

In the face of federal regulation that favors farming corporations and individuals with significant capital to continue operations how can small farmers make a profit and continue operation? Multiple methods exist in providing subsidies, loans and other incentives, but for many small farmers across the globe agricultural cooperatives have been formed much like a credit union to best benefit the co-op's members. By pooling resources together, the members can utilize facilities and services that were not available to smaller producers. France is well known for its wine co-op's, where wineries band together to share crop resources and cost of machinery to produce a collective wine. Closer to home is the Sunkist Growers Inc. cooperative that has brought together over 6,000 individual citrus producers across California and Arizona.<sup>328</sup> By joining the marketing cooperative, the member receives services that help them process, package, distribute and access a global market and recognized branding.

Similarly, the largest producer of Kona Coffee on the island of Hawai'i is the Kona Pacific Farmers Cooperative. Starting in 1955, 101 farmers came together to form a co-op to process and market Kona coffee beans.<sup>329</sup> By 1956, out of nearly 800 coffee farmers, 150 farmers joined the co-op and expanded the business to markets abroad. The group has been able to consolidate resources to fight harmful pests and achieved significant economic success, built from a collective effort of small farms.<sup>330</sup> Yet, the overriding question is how can a cooperative model proliferate throughout small farming

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<sup>328</sup> "About Us." Sunkist. 2015. Accessed March 23, 2016. <https://www.sunkist.com/about-us/>.

<sup>329</sup> "Kona Pacific Farmers Cooperative - Pure Kona Coffee." Kona Pacific Farmers Cooperative - Pure Kona Coffee. Accessed March 20, 2016. <http://www.kpfc.com/about.html>.

<sup>330</sup> Ibid

communities and what implications would it have for local produce in the event that a cooperative may set-up? Facilities must be made available for the processing and marketing of the produce and the encouragement of new farmers to join is what it takes. Cooperatives could play a major role in the future of food production and distribution in the islands, using collective programs to process and prepare food at a scale small farmers couldn't obtain.

### **3.3 Hawker Planning and Site Selection**

Utilizing Geospatial Information System (GIS) software, existing data can be overlaid over one another to begin to paint a picture of the varying conditions and characteristics of areas island-wide. Key to the implementation of the hawker model would be the rigorous identification of suitable sites and development of a sustainable system that could supply resources to vulnerable communities. It should be noted that the proposal here on is developed under the acknowledgement that not all of the proposed centres would be constructed at once. As with Transit Oriented Development, the Hawker Development Plan would emphasize a careful phasing of centre construction with critical locations being priority centres. To begin identifying suitable investigation sites, an understanding of the island of Oahu's (Honolulu County) context must be included.

#### **3.3.1 Key Characteristics of Oahu**

\*\*\*Maps and Diagrams will follow the section discussing them for easier reference and continuity

Oahu is the third largest island of the Hawaiian Islands<sup>331</sup> yet is home to 953,207 people<sup>332</sup>. Honolulu, the islands' only big city, is nestled between one of two mountain ranges and the southern facing shores on the Pacific Ocean. Urbanization of the suburbs has contributed to urban sprawl as the area surrounding Ewa Beach and Kapolei have experienced substantial growth in sub-division-like single/multi-family residential communities. Due to the presence of two mountain ranges, the Ko'olau and the Waianae

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<sup>331</sup> Hawaii = 4,028 mi<sup>2</sup>, Maui = 727 mi<sup>2</sup>, Oahu = 597 mi<sup>2</sup>

<sup>332</sup> 67% of the state-wide population

mountain ranges that rise above the central plain and coastal areas to heights of 4,000 feet, contribute to the rain shadow effect. Mānoa Valley, for instance, is reported to have an average annual rainfall of approximately 151in, while parts of the west coast and Waianae areas receive around 22in a year. Trade winds typically blow from the North East carrying cooler air, however western and southern winds occur at times and are typically associated with dryer warmer air.

Land use on the Islands has been of hot-debate in recent years as the disappearance of agricultural land and other culturally relevant sites are lost to the unstoppable force of urban sprawl. Central and West Oahu has the highest acreage of agricultural land on the island. It should also be noted that the United States federal government and military occupy a fair amount of land. According to U.S. Census data, reported income levels also identified several census tracts with high instances of household incomes under the federal poverty line. Clustered in the Honolulu city center, North Shore, Waianae Coast, and Waimanalo Bay areas, incidence rates for poverty show certain communities express rates above 14% of the total population. Further investigation of these populations reveal that the census tract found outside of the city center are comprised largely of communities that identify as being of Native Hawaiian/Pacific Islander, White and Mixed descent. Within the city center, the vast majority of census tracts are identified as having moderately higher identification with Asian descent.

While the population changes, investments and businesses are moving towards more profitable endeavors in the ‘new’ area of town. Current major development plans are

highly focused on Transit Oriented Development, Kapolei/Ewa Communities, Kailua and Kaka‘ako. Many areas, which are in greater need of investment and opportunity, are often glazed over, with money being spent even at the state and federal level, to improve higher SES communities. Of note is the current distribution of super market stores along the Waianae coast. The lack of resources to vulnerable communities has made them a target to be label with food dessert status by the USDA. A number of factors are considered when investigating food dessert prone areas, but the most significant identifiers is ease of access (Transportation and Infrastructure) and location/type of grocery suppliers. It is also important to take into account vehicle ownership/access and distance to and from said grocery locations, especially since Hawai‘i has a large portion of the population without vehicle ownership. When overlaid with grocery locations, USDA data can highlight the most significantly impacted communities due to low access to grocery facilities. In Figure \*\*\*, the highlighted areas show communities that have greater than 20% of the population further than .5 miles from a food source with low vehicular access. The USDA study also considers corner stores, which typically have higher food costs and often advertise products such as alcohol and tobacco in low-income communities, as food sources. For the purposes of being able to provide affordable food to the general population, these facilities have been removed from the study as viable food sources, as they are counter productive in providing safe, relatively healthy and affordable foodstuffs.

Once the grocery stores and super market have been extracted and overlaid with population densities, a clearer picture can be made on the distribution of food access

throughout the island. Figure \*\*\* shows food source locations with a 1mile radius, not taking into account inaccessibility due to barriers in the infrastructure (i.e. winding roads, highways, walls...). The picture painted shows to service relatively well the majority of high-density areas on Oahu. However, if catering to a walking community this radius represents a +/- 17-minute walk in a straight line one-way. To many, such as the elderly, persons with disabilities and small children, this would be a rather discouraging commute to acquire affordable foodstuffs. Not to mention having to carry the food back to one's pantry. If the radius is instead shortened to .5 miles (+/- 8 minutes), then much less of the population is affectively covered. This is detrimental for communities where parents are forced to work long hours and children are left to find their own sources of food while their parents are away. The communities most affected by this change are the identified low-SES communities in previous data.

So now the question is, "Where do we look to find locations to reach these vulnerable communities?" Should we leave the answer to be solved by private developers or take it upon ourselves to allow a social effort to provide food to vulnerable populations? The hawker centres in Singapore is 'public space', as mentioned in the development of town centres within the HDB and often accompany open space and greenery. The State of Hawai'i and City and County of Honolulu already has a robust park system in place, many of which are slated for major and extensive repair work. When compared to population densities, it can be seen that a reasonable majority of concentrations of population is serviced by one of more local parks. In a hypothetical situation where hawker centers are to be constructed throughout communities so as to provide affordable



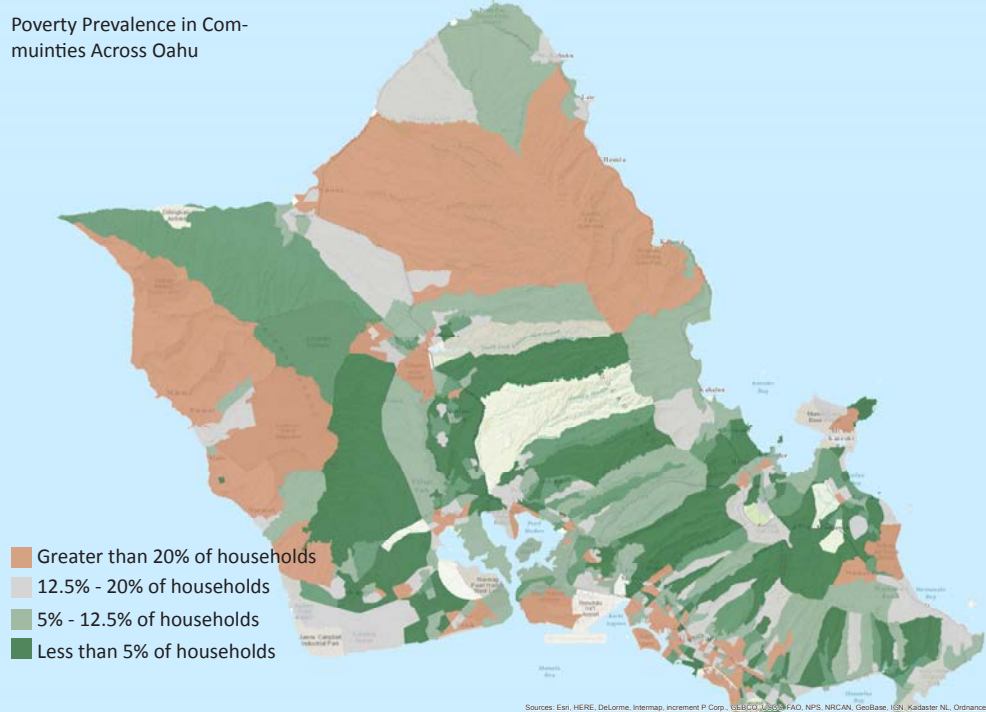
and accessible food, it could be proposed that utilizing the public parks system to not only improve existing park facilities, but strengthen the operational longevity, community reinforcement opportunities and overall mission of the Oahu 'Lei of Parks' by also including in the program public hawkers. The following section will identify two case study districts that will be utilized to develop a hawker prototype for Honolulu.

Map of Oahu

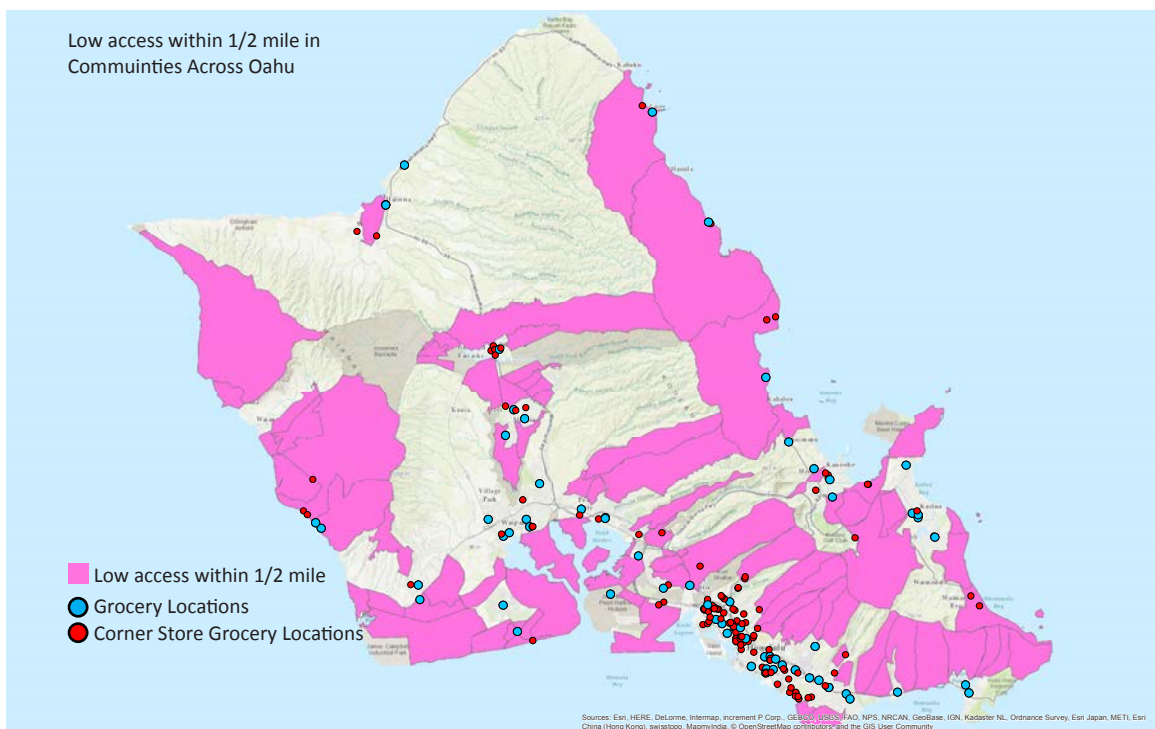
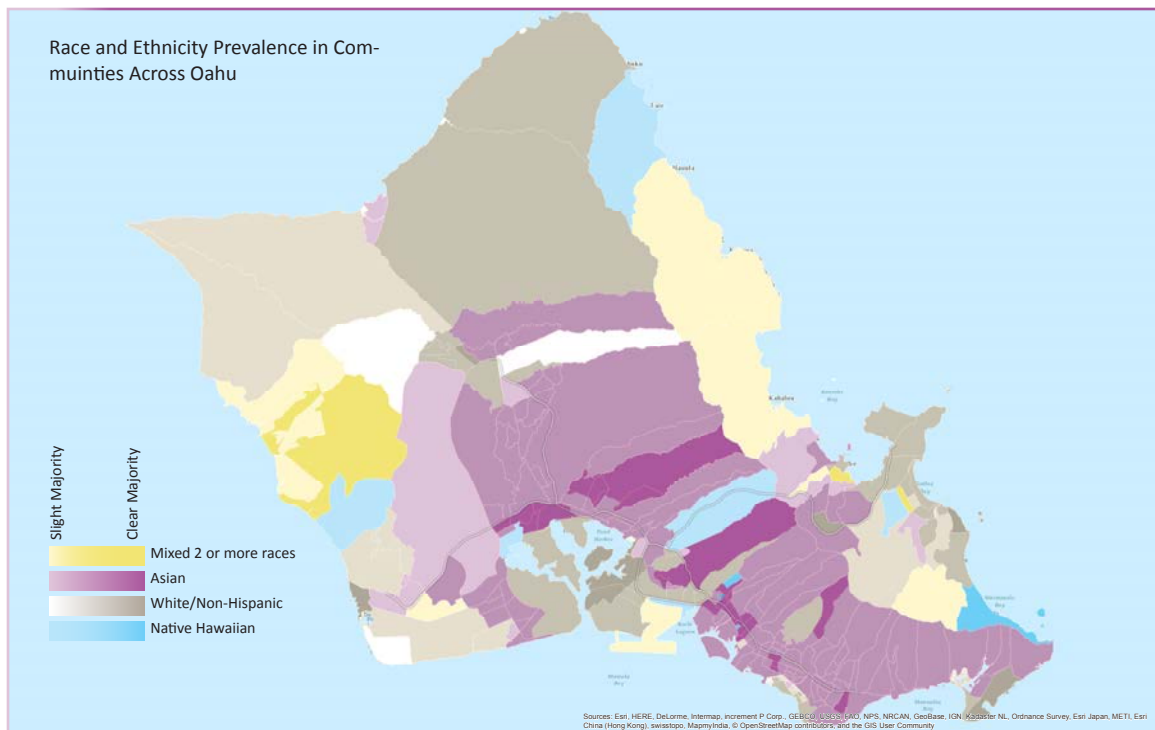


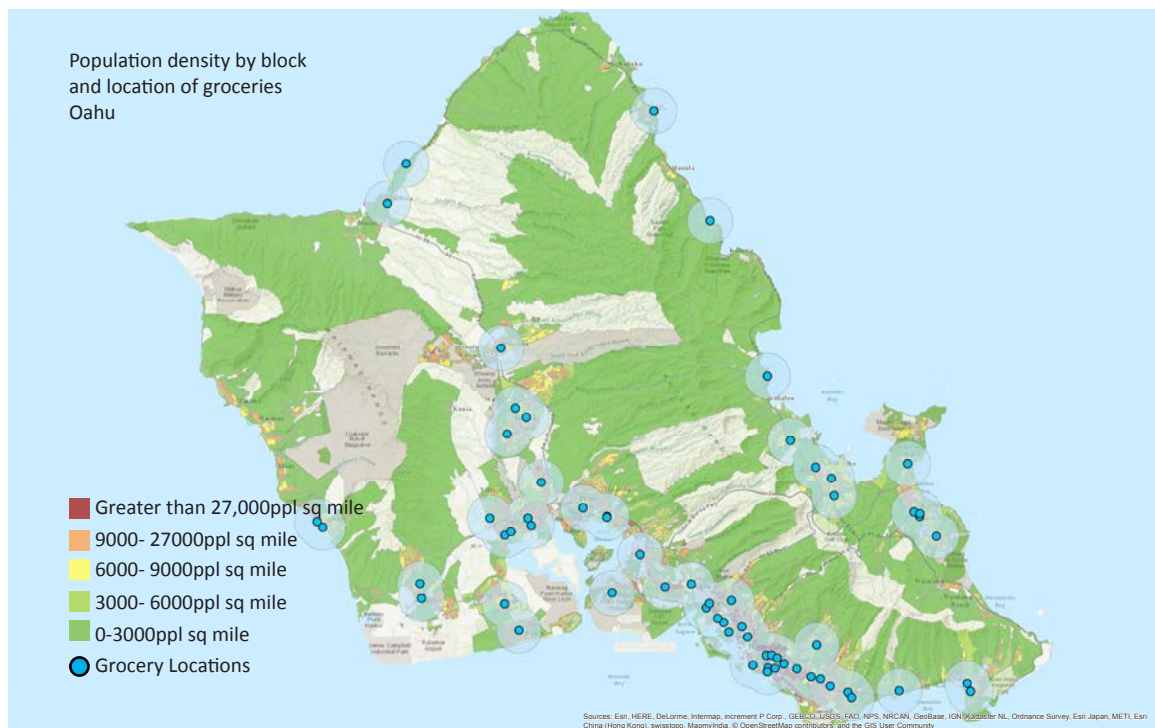
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), Swisstopo, MapboxIndia, © OpenStreetMap contributors, and the GIS User Community

Poverty Prevalence in Communities Across Oahu



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), Swisstopo, MapboxIndia, © OpenStreetMap contributors, and the GIS User Community





### **3.3.2 Selecting a Community**

For the development of the hawker prototype, two distinct types of communities are evident on Oahu, Urban and Suburban (incl. Rural). This differs slightly from the typical understanding of urban spaces even as designated by zoning in the City and County of Honolulu, where the distinction between urban and rural areas is stark in contrast. This broader understanding of the urban context can better reflect the needs associated with each community the hawker centre becomes integrated within. The two types of sites also identify different needs and opportunities that the hawkers need to address and/or nurture. The two selected districts and the reasoning for the selection is as follows:

#### **3.3.2-1 Waianae Coast: Nanakuli, Ma‘ili, Waianae and Makaha**

\*\*\*Maps and Diagrams will follow the section discussing them for easier reference and continuity

Being in a largely rural/suburban context, the Waianae Coast has not only a vulnerable population, but open areas of land that could influence how hawker centres in an urban core differ from those on the outskirts (a typology not typically found in Singapore). The area represented consists of communities that have identified a higher rate of poverty than other areas in Honolulu. Some communities report as high as 40-50%. It is also designated as the largest area with the highest population in danger of being vulnerable to food desert status. The current infrastructure is inadequate for providing reasonable access to many in the community to sites of food access. The two known supermarkets are located in Nanakuli, at the start of the Waianae Coast Corridor; this leaves the responsibility of providing food to the rest of the community that is often separated by geological features such as mountains and streams to corner stores and other less healthy

options such as fast food. Strips of commercial zoning dot areas along Farrington Highway and the coast. Most of the valley is home to the Lualualei Military Reservation and according to land use zoning maps; much of the agricultural land in West Oahu is located within the protective enclave created by the crescent shape of the Waianae Mountain ridges. The opportunity to support the local farmers and fishermen may be utilized in the future design of a hawker center in providing healthy and affordable products to the community.

The location of the two listed groceries are limited to Nanakuli and are operated by Sack’N Save, a low budget grocery, and Tamura’s, an alcohol centered and specialty foods superette. Two farmer’s markets operate in Waianae at Pokai Beach Park and Waianae Makele Market. The inclusion of such a resource is commendable in its ability to reach low access communities, however a number of operational practices serve as a barrier to effectively mitigate food equity. The first issue is the markets’ duration of operation. Pokai Beach Peoples’ Open Market operates on Fridays from 11:00 am – 12:00 pm, while Waianae Farmer’s Market operates on Saturdays from 9:00am-2:00pm. The ability for local residents to participate in the services provided by the farmer’s markets is limited due to the inconvenient timing of the event during the workday or number of days in which it runs. However, the management of setting up farmer’s markets and the necessary permissions need to be obtained to operate could be a separate study in their own right.

Locating suitable sites for the hawker centres need to be approached from two main lenses, population and infrastructure. Ideally, the construction of the center shouldn't displace current residents or cause any hardship to them or their properties. Similarly, centres should be located along common routes and recognizable centers of the community. Population and density also has a factor in prescribing how many hawkers and how close or far should they be from communities. As in the Singapore hawker centres, alternative transportation should be a deciding factor in being able to bring people to the various locations centres will eventually be built. Walkability should be promoted and a recommended maximum walking distance of approximately .5 miles (+/- 8 minutes). Fortunately, The Waianae Coast has a fairly well appropriated public parks system, with each community cluster having a sizable park to call theirs. Inversely, the unfortunate aspect of the public parks system is that, aside from the beachfront parks, the inland parks are in need of major or extensive repair work. These sites could potentially become the early phasing of the implementation of a hawker-planning project; with less urgent parks becoming upgraded in later phases.

Utilizing population data, hawker stall appropriation may begin throughout the area. Waianae Coast consists of four main areas (Nanakuli, Ma'ili, Waianae and Makaha) with a total population of approximately 49,392 residents.<sup>333</sup> After calculating 1 hawker to every 372 persons, the Waianae area should have a total of 132 hawker stalls divided between the four areas:

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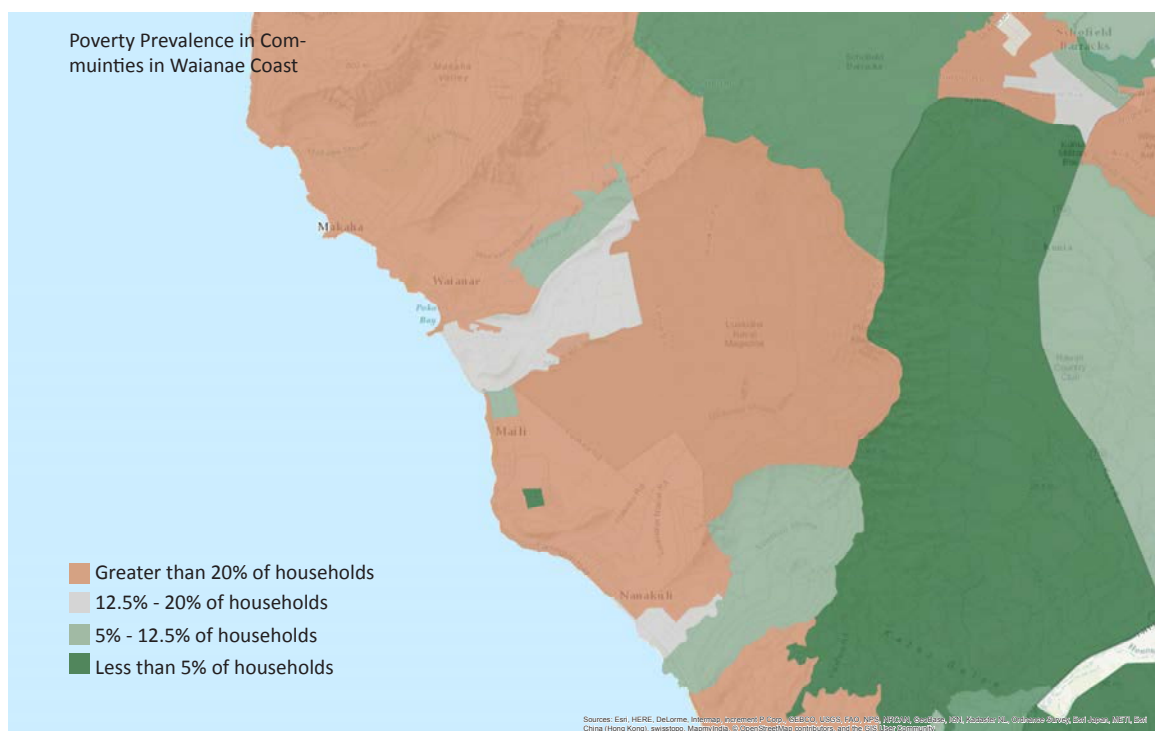
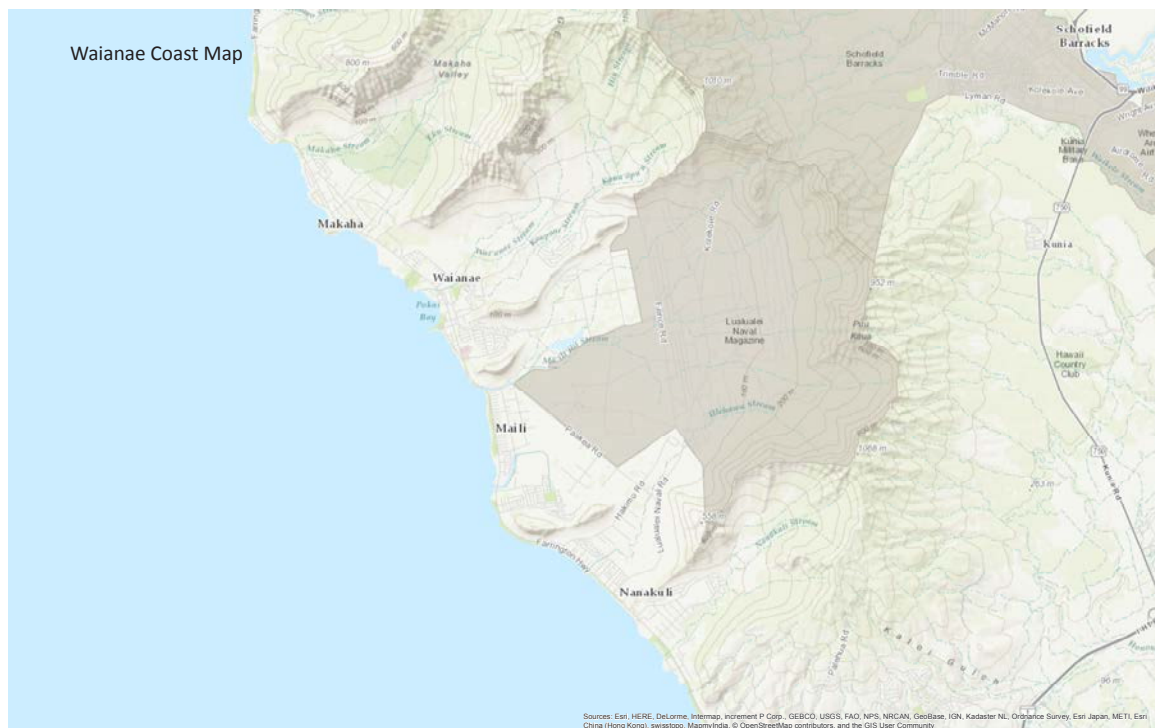
<sup>333</sup> 2010 Census data, US Census Bureau

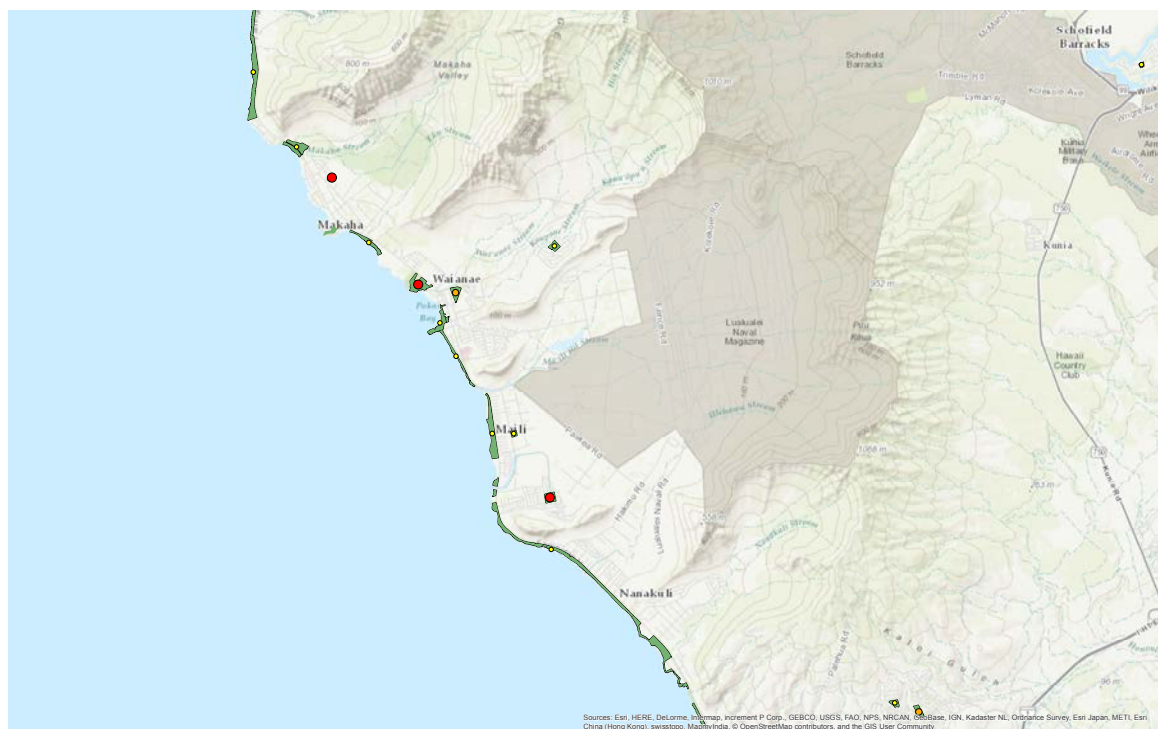
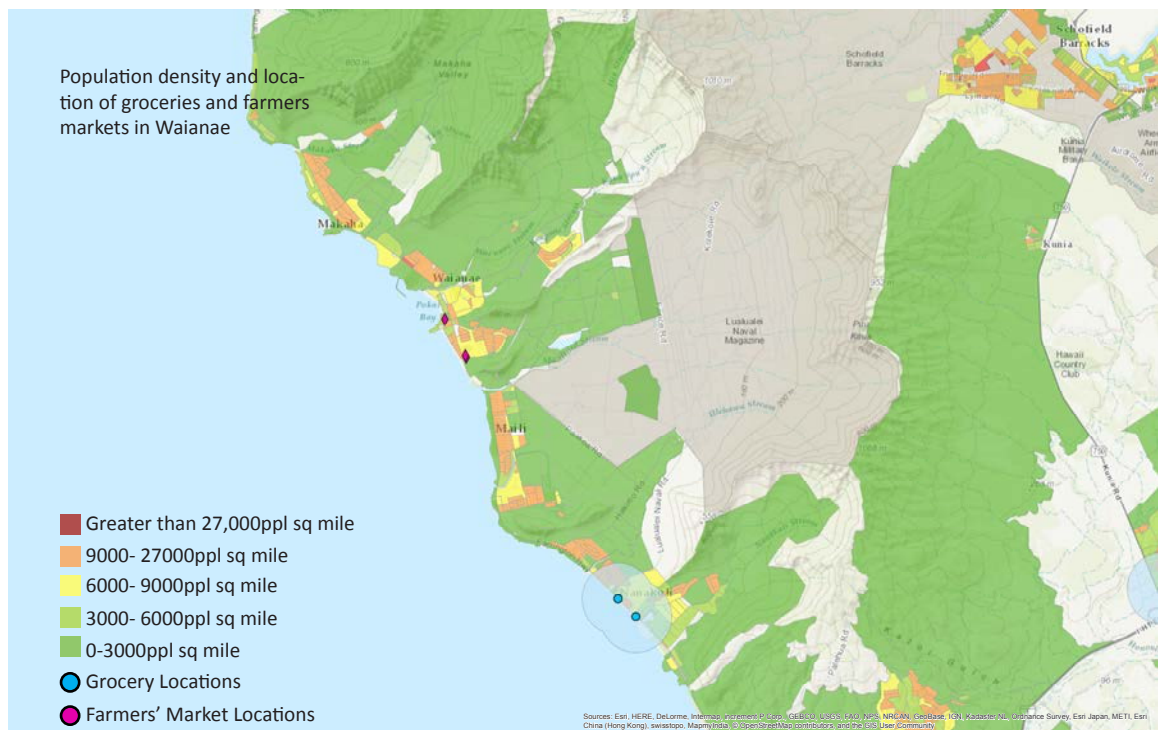
Nanakuli:	12,884 pax	34 stalls
Ma‘ili:	10,570 pax	28 stalls
Waianae:	16,734 pax	45 stalls
<u>Makaha:</u>	<u>9,204 pax</u>	<u>25 stalls</u>
Total:	49,392 pax	132 stalls

Depending on the relative size of the community, individual areas have multiple centers as to serve the full extent of the community in a reasonable walking distance. Chosen for their closeness to areas of higher density and population centers, the sites shown in figure\*\*\* highlight 10 prospective locations. Each center’s stall count responds to the surrounding population size and available resources. Within these centres, stalls would be further adjusted to meet the required ratio of market, sundry and cooked food stalls and further investigation to decided where emphasis should be place if need be.

Location	Centres	Stall Count (###/##)
Nanakuli	3	16/10/8
Ma‘ili	2	10/18
Waianae	3	23/15/8
Makaha	2	15/10









### 3.3.2-2 Mo‘ili‘ili: Ala Wai Canal, H-1 Freeway, Kalakaua Avenue and Kaimuki

\*\*\*Maps and Diagrams will follow the section discussing them for easier reference and continuity

The opportunity to develop a hawker centre in the urban core of Honolulu presents its own set of unique challenges that correlate with how a city flows and operates. Dense urbanization, as evident in much of the Honolulu context, also restricts the viability of spaces being reserved for gardening and other public works. In my investigation of selecting site in the urban environment, the crossroads of four communities struck me as significant, especially when observed with its relatively high rate of households under the federal poverty line. The scale of observable area has also been adjusted in response to the density levels and community identification within Honolulu. Mo‘ili‘ili is primarily zoned as A-2 medium density residential apartments, with some areas being set aside for A-3 higher density development along the Ala Wai Community Park. Also, BMX-3 mixed-use commercial zoning continues the length of the King Street and Beretania Street corridor as it connects downtown to the University of Hawaii at Mānoa and H-1 Freeway East. To the north of the district, the H-1 Freeway cuts through R-5 residential neighborhoods that continue into the Mānoa Valley communities. Ala Moana Shopping Center and the Ke‘e‘aumoku Street corridor separate Mo‘ili‘ili from the Ward and Kaka‘ako special district to the West. To the East, Kaimuki High School and Ala Wai Golf Course separate Mo‘ili‘ili from Kaimuki and Diamond Head districts. Ala Wai Canal flanks the southern edge and divides Waikiki special district from the rest of Honolulu.

Current densities remain highest along the Kapiolani Boulevard and Kalakaua Avenue corridors, with lower densities along King and Beretania Streets. The current grocery infrastructure appears at first to be sufficient to supply the entirety of the Mo'ili'ili area, however this is primarily due to a pattern of supermarket construction along King and Beretania Streets. Longs Drugstore (formerly Star Market), Times Supermarket, Don Quijote (formerly Daiei), and 2 separate Foodland stores service the entirety of the neighborhood and surrounding areas. However, the areas of highest densities are at the furthest reaches of the walking radius to the grocery stores and with pockets of holes that extend beyond their affective radius. The Waikiki area has no proper supermarket of its own, excepting the various corner store groceries and overpriced Food Pantry stores.

Similar to the Waianae Coast, numerous public parks are accessible to the community, with some being in need of significant repair work and others less so. Many of these parks are fairly small green spaces not larger than a typical parcel of land in the area, however the community does have a major destination park, Ala Wai Community Park, which is utilized currently as a launching point for canoes, various sports activities and general recreational use. Due to the high traffic located along Kapiolani Boulevard, McCully Street, Kalakaua Avenue and University Street, many people from surrounding areas (notably Waikiki and Date Street) come to high traffic intersections to make use of the public bus system. Current infrastructure is being utilized to its limits and upgrading work on facilities such as sewage lines and disaster protection is in the works. Due to the foreseeable size requirements required for the construction of the hawker centres and their stall numbers, it should be recommended that the centres be located along major

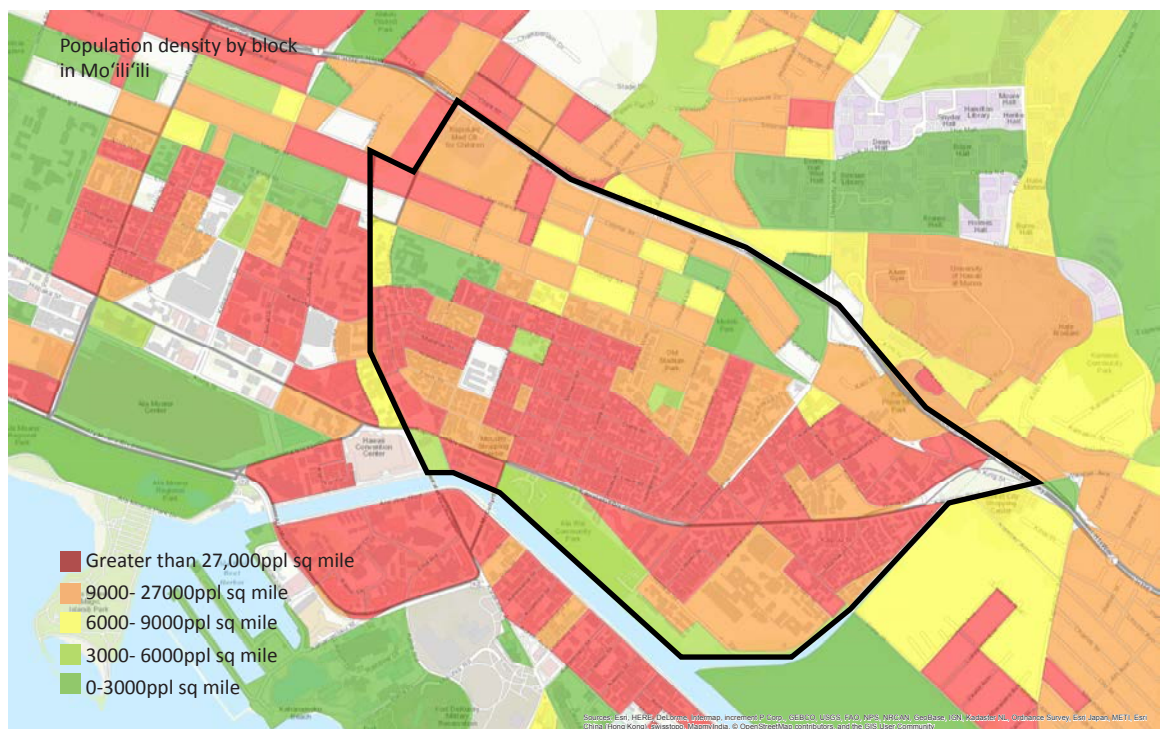
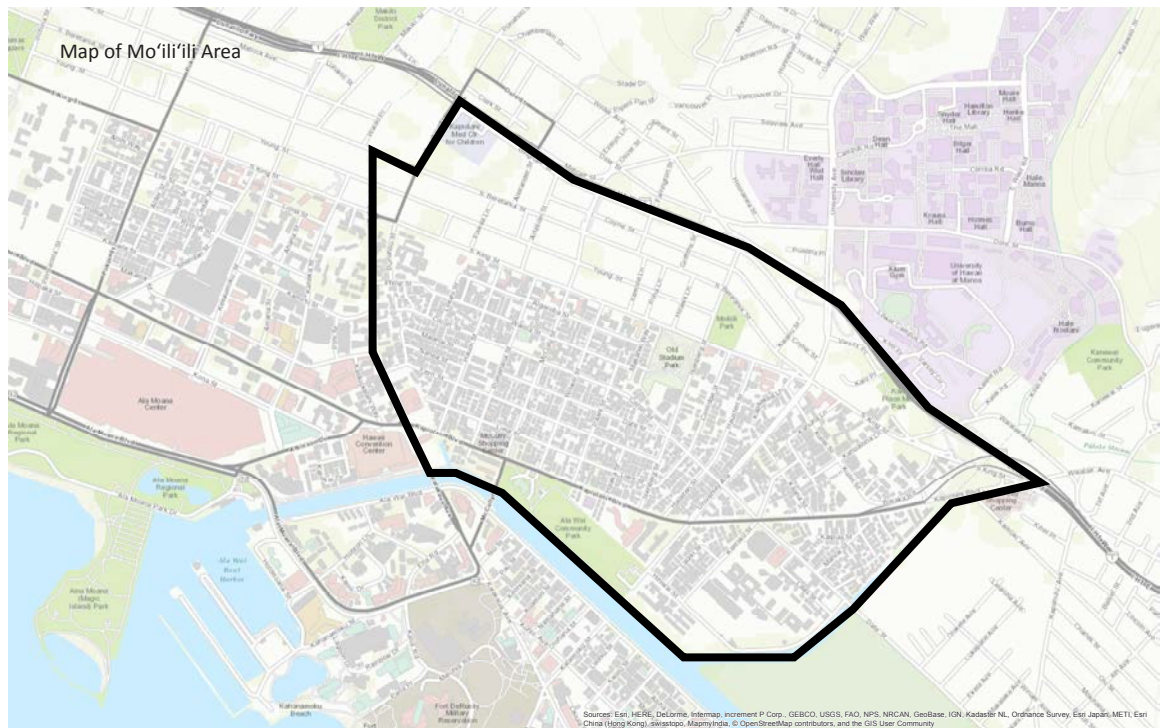
corridors and preserve and facilitate pedestrian circulation throughout the neighborhood. Because of the size of the neighborhood and the limits of the hawker centres' effective radii, it would be safe to assume that the centres will extend beyond the limits of their current neighborhood and affect tributary populations and vice-versa.

The approximate population, according to census data in 2010, of Mo'ili'ili is 26,980 people. This would mean that a total of 73-hawker stalls would be needed to provide the neighborhood proper resources. Splitting the hawkers into three centres to service the community creates too many areas of overlap and affectively renders the utilization of other neighborhoods park locations useless due to proximity to one another. Two centres, one placed at Stadium Park on the intersection of King Street and Eisenberg Street and the other at Ala Wai Community Park at the intersection of Kapiolani Boulevard and McCully Street, service the majority of the community without sacrificing too much or too little to neighboring communities' centres. However, by placing a hawker centre at Ala Wai Community Park, the centre also absorbs a portion of the population in Waikiki across the McCully Street Bridge. This tributary area is estimated to contain a population of approximately 13,325 people, in other words half of the entire Mo'ili'ili community. This would require the addition of 36 stalls to the Ala Wai Community Park centre. Originally having to accommodate 73 stalls, the two centres combined would require the housing of 109 hawkers. For simplicity, rounding the number to 110 would be reasonable for the purpose of designing. Furthermore, the area in which the Ala Wai Community Park centre serves is much higher trafficked by pedestrians than Stadium Park, which lends to the decision to appropriate a larger number of stalls to the Ala Wai centre. The

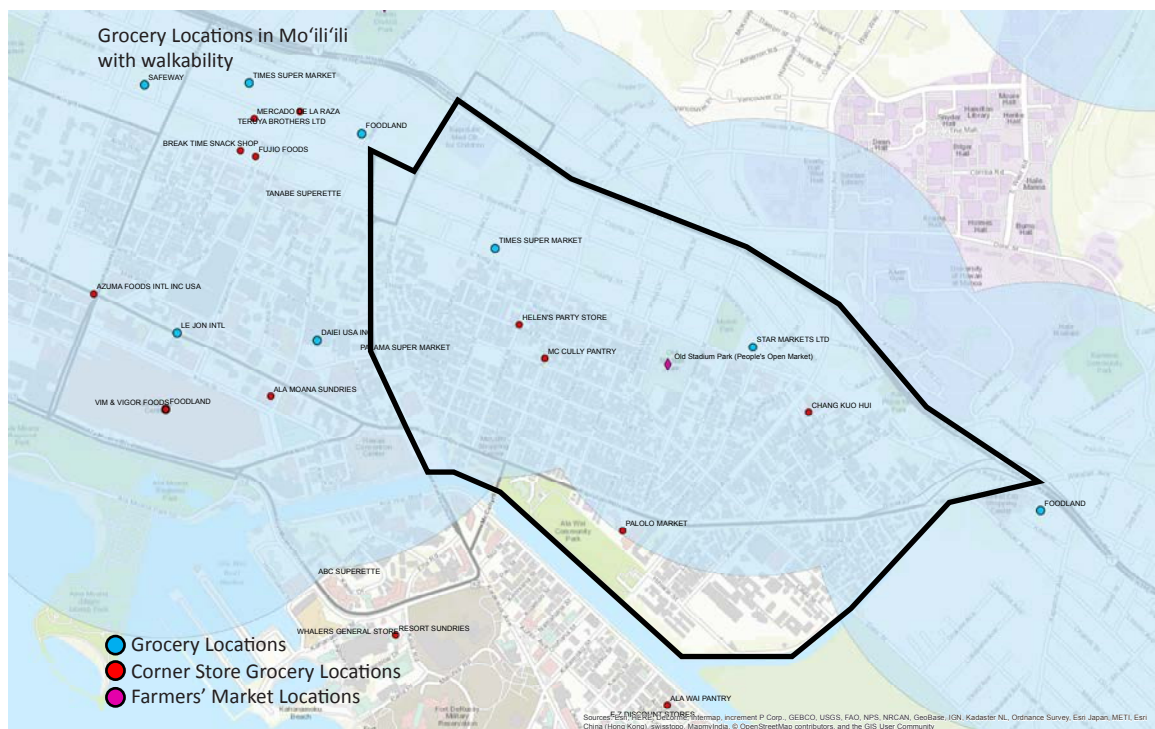
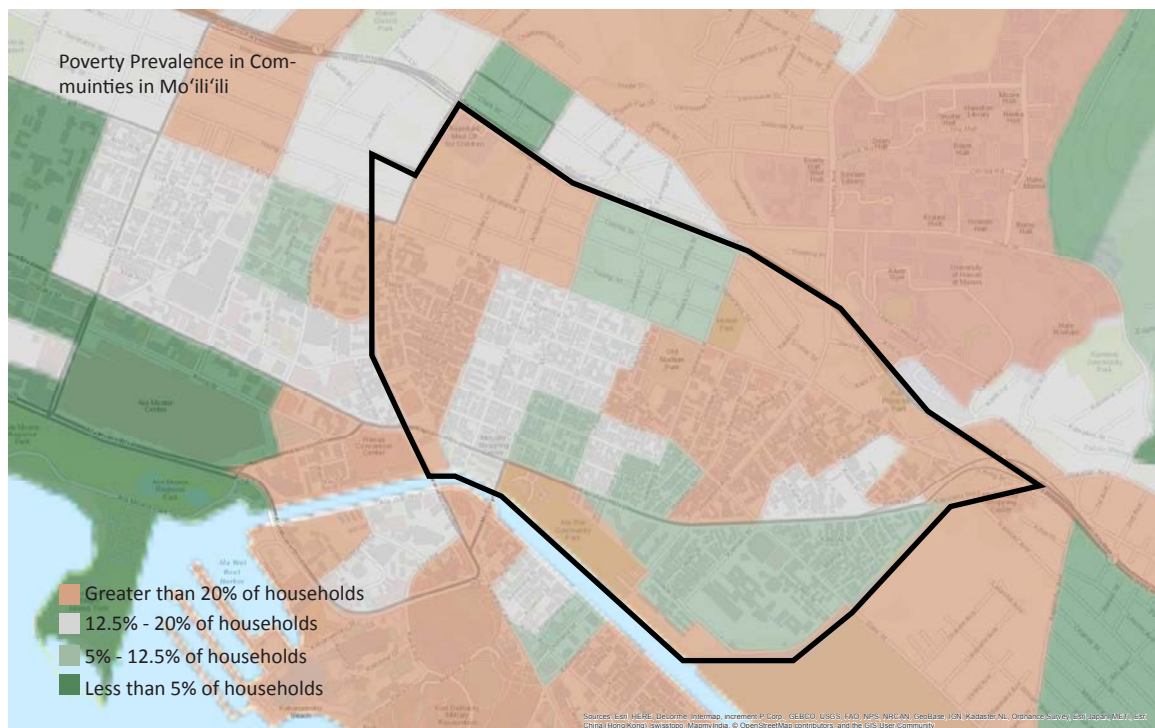
Stadium Park location still serves a large community, primarily within the boundaries of Mo‘ili‘ili, which has also given that location preference for appropriating a larger majority of the neighborhood specific stalls, whereas the Ala Wai centre will receive all of the 36 tributary stalls from Waikiki. In total, the final decision to award 40 stalls to the Stadium Park centre and 70 stalls to the Ala Wai centre represents a fair and relatively equal distribution between the two sites and still affords those living in between to choose which to centre to visit.

Location	Population	Stalls
Stadium Park	14,880	40
Ala Wai Community Park	25,425	70











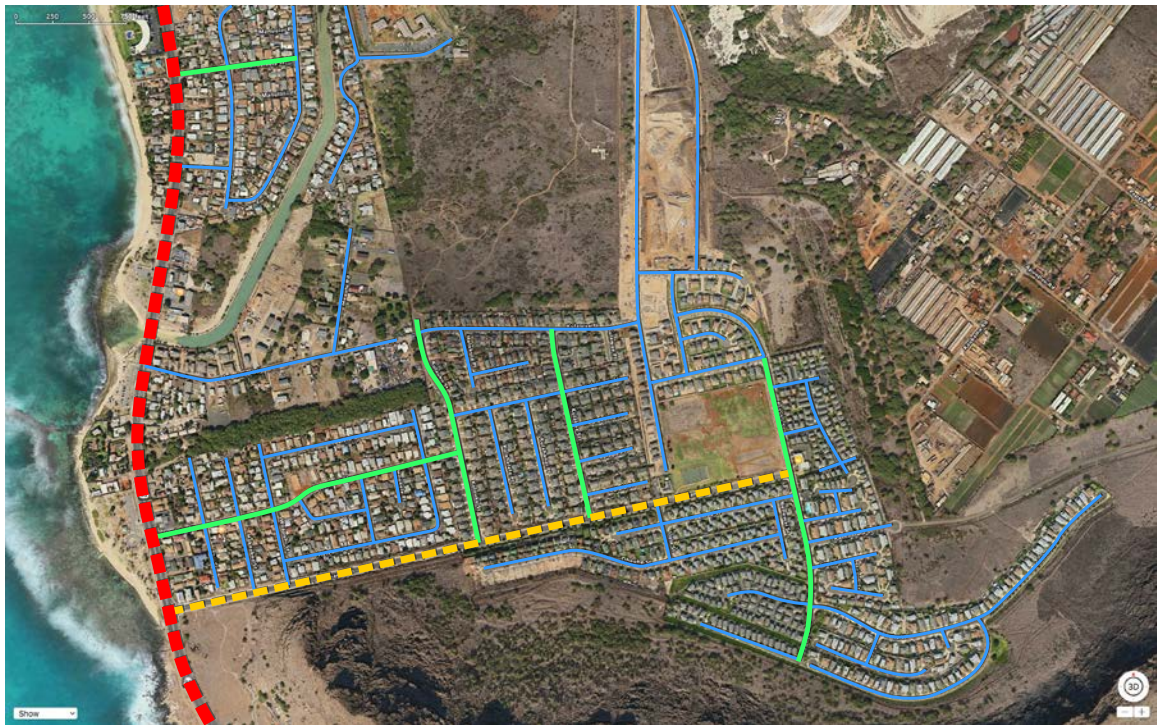
### **3.4 Site Selection**

#### ***The prototype***

Two prototypes will be developed to explore the implementation of a hawker program in the context of Oahu. A functional frame work has been discussed in previous sections, and more will be touched upon within the follow processes and analysis, however the architectural responses to the functional requirements of the hawker centre will provide further information for what a community would look like if a hawker centre was introduced. The two typologies will be an Urban Centre and a Suburban Centre with different conditions based on site and how it relates to the immediate community the centre is placed.



### 3.4.1 Pu'u'ohulu Community Park: Macro



- Major Road
- - - Arterial Road
- Auxiliary Road
- Minor Road

Vehicular Circulation



- Bus Routes (Different Colors)
- - - Self Proposed Community Shuttle
- Current Bus Stops
- Potential Future Stops for Shuttle

Bus Transit Circulation





- Current Bike Route but highly dangerous
- Proposed Bike lane or trail
- Possible Bike Road Shares

Bicycle Circulation

Pu‘u‘ohulu Community Park is located approximately .7 miles inland from the beach, set in the midst of a newer single and multi-family development. The base elevation of the site is at 45 feet ASL and sits on the foothills of the Pu‘u‘ohulu Kai and Uka sister peak mountains. Directly to the East is the Lualualei Military Reservation and agricultural land. The park maintains a slight upward slope in the south east direction as the boundaries of the park meet a 3-4 foot embankment along Kaukama Road and Pakeke Street. Current facilities provided are a volleyball court, basketball courts, baseball field, gravel parking area and a football field H-shape goal. At the intersection of the main access (Kaukama Road and Pakeke St) The Shops at Sea County is currently in the process of constructing interiors for three new shops. Current tenants include Sea County General Store and a Nail and Hair Salon. Further investigation into the scope of construction materials and equipment outside of these future shops lend evidence to the possibility of them becoming dine-in restaurants. At the Southwestern corner of the site, a child development and care center opens to the main access road. Across the street, single-family residential communities rise up towards the Pu‘u‘ohulu mountains. The northern edge of the site is bound by the residential fences of another single-family residential community, which also has homes along the western edge opening up in the direction of the park from across a street and cul-du-sac. Across Pakeke Street to the East is a multi-family residential community that separates the park from the agricultural land beyond.

Near to the area is land designated as part of the Department of Hawaiian Homelands, which maintains a resource learning center for Native Hawaiian cultural practices and

discussion. Popular hikes are also found in the area, closest being the Pu‘u‘ohulu Kai hike that offers panoramic views of the entire Waianae Mountain Range and coast. Lualualei Military Reservation inundates the surrounding communities with members of the military who are stationed in nearby bases. The most iconic man-made structure in the immediate area is Lualualei VLF transmitter towers owned by the United States Navy. Built in 1972, they stand at 1,503 feet over the valley floor, once being the tallest radio structures in the western hemisphere.

Access to the community and the park is by way of either Kaukama Road or through an auxiliary road that connects the newer subdivision to the older community closer to Farrington Highway. Connection to the agricultural land towards the mountains is not prohibited the community is further separated from the greater Ma‘ili area by means of a drainage canal meant to handle excessive flooding in the area. In fact, the park itself is divided from the residential community bordering it by way of a drainage ditch. Rather than shedding water from the site, it may be possible to retain that excess water and use it for irrigation and other site specific needs to convert the overly dry landscape into something more hospitable to habitation.

By car, the approach to the site to and from the major coastal access road lends a feeling of accession and descending as the driver either travels up onto the footing of Pu‘u‘ohulu Kai or is met with the Pacific Ocean as it spreads across the horizon at Mā‘ili Point with waves crashing on top of the lava rock shore line. However, alternate forms of transportation do not exist such as bike access and bus. The nearest bus stop is actually

on Farrington Highway along the coast. This is problematic in that the community stretches up to 1 mile up hill in a relatively hotter microclimate due to the rain shadow effect created by the Waianae Range. Instating a mini trolley system that serves only the local community, however, could mitigate this. Figure 60 displays what a possible route solution would look like when implementing the trolley system. Fortunately, a public school bus system is utilized, in which I was able to witness the dropping off of students at the intersection of Pakeke St and Kaukama Road, yet even these students had to disperse themselves into the community from this location. As for a bicycle system, it is non-existent. Figure 61 highlights the city's proposal to expand the current bike route facilities throughout the island community with the red line representing not just the location of the current bike route, but also its high level of difficulty and degree of danger. The dashed blue line represents the city's proposal to construct an actual bike lane, while the green dashed lines are proposed routes by myself that would incorporate share lane programming.

The site is not located within any designated flood plain, nor does it have any significant threat due to tsunami or excessive rain. Any runoff from the communities above the park would continue down the slight slope of the park until the proper drainage redirects the water to the appropriate drainage canal. Ideally, retention of water would be desirable in the form of bio swales and other collection methods. This could be used to encourage the growth of vegetation on the site and surrounding public spaces, cutting costs for the city and promoting natural beautification.



The park is designated LUO P-2 general preservation which Chapter 21 of the Land Use Ordinance cites, “the intent [is] that lands designated urban by the state, but well-suited to the functions of providing visual relief and contrast to the city’s built environment or serving as outdoor space for the public’s use... be zoned P-2.”<sup>334</sup> Table 21-3 permits the construction of public spaces and structures in P-2 designated zones. Assuming that the hawker centre maintains the distinction of it being part of the public realm as it is in Singapore and not private ownership, an argument could be made to accommodate the programming of the structure under such a designation. The P-2 designation also has a recommended development standard for height and setback limits. Typical height limits are set to 15 feet, but may be extended to 25 feet if height setbacks are observed. The setback requires that for every two feet in height above 15 feet, the building must be setback 1 additional foot from the current buildable boundary. It should be noted that a proposal to introduce a new category or subcategory of restrictions could be applied to tailor the further development of the required hawker programming (i.e. Roof heights for natural ventilation purposes, community programming being stacked in order to preserve existing land, etc....). For the purposes of preserving evidence based design practices derived from the models presented in the earlier part of this research and with the centre’s relative operation as a business, I recommend adopting a hybrid zoning structure that adopts some of the characteristics in various business districts (B-1, B-2, BMX-3 and 4) and the P-2 general preservation guidelines. Perhaps its designation could appear as PMX-3 and allow for the implementation of new and novel ideas that specifically nurture the health and longevity of a community. Furthermore, it could

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<sup>334</sup> LUO Chapter 21 page 43, Hawaii Office of Planning

produce a new type of zoning which directly integrates agricultural practices and development as the centre could serve as a point-of-sale resource for small farmers. This may be expanded at later times to include protections for these producers.

### *Existing Plans and Future Proposals*

The most recent master plan for Pu‘u‘ohulu Community Park was developed and proposed by Walter’s Kimura and Motoda Landscape Architects in 2001 for the development of the park as a vibrant community resource including various sports facilities, a recreation center and jogging path. As of current, the two elements that have been constructed is the softball field and gated basketball and volleyball courts. Evidence of the community utilizing the open space for purposes other than what was prescribed is present, including tiretracks and a makeshift football goal. Access from the residential community on the north edge of the site has been granted by means of a manicured pedestrian path and a break in the walkway along the western boundary of the site prevents a continuous connection to the sidewalk along the main street.

### *Climactic conditions*

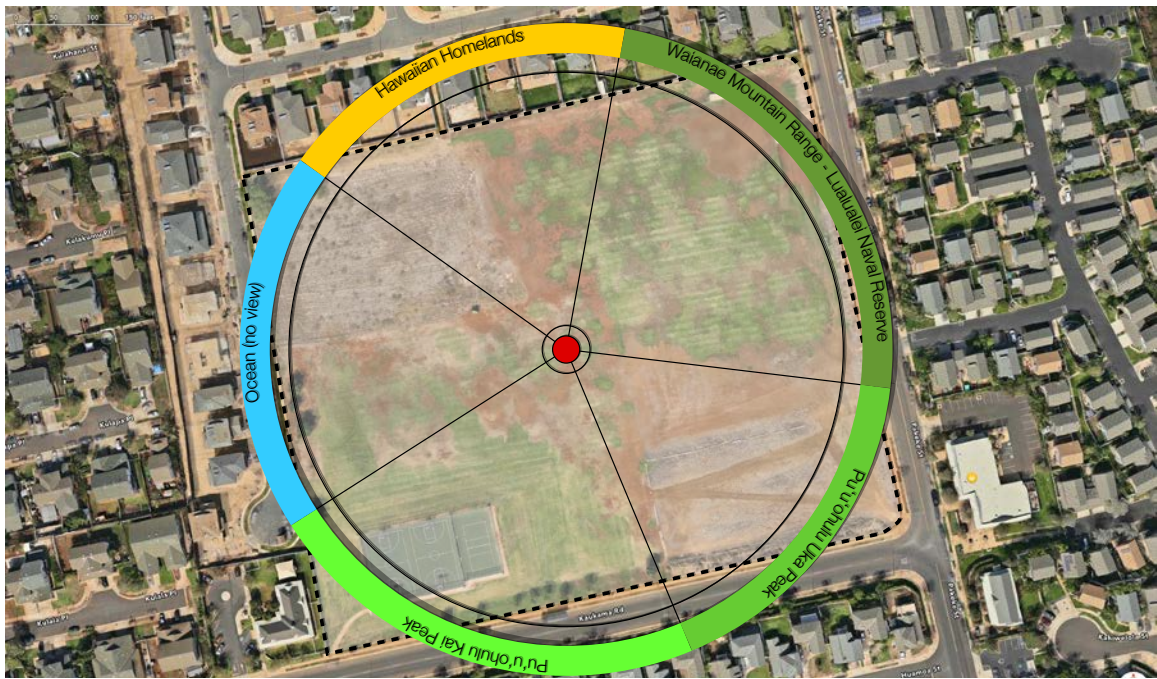
Temperature differentiation is typically similar to that of Honolulu, however the average annual precipitation rate in the area is 22in.<sup>335</sup> Inversely, on the other side of the mountains in Mililani, the communities receive an average annual precipitation rate of 58in. The rain shadow has a substantial affect on this, as it does likewise in Honolulu.<sup>336</sup> Also related to the rain shadow effect, predominately the winds originate from the east-northeast as trade winds. These winds are characterized by the steady gusting and cooler temperatures associated with them as they originate from jet stream further north in cooler environments. When blowing from the opposite direction, winds are usually weaker with breezes of warm air. Although not as often, if winds do blow from the

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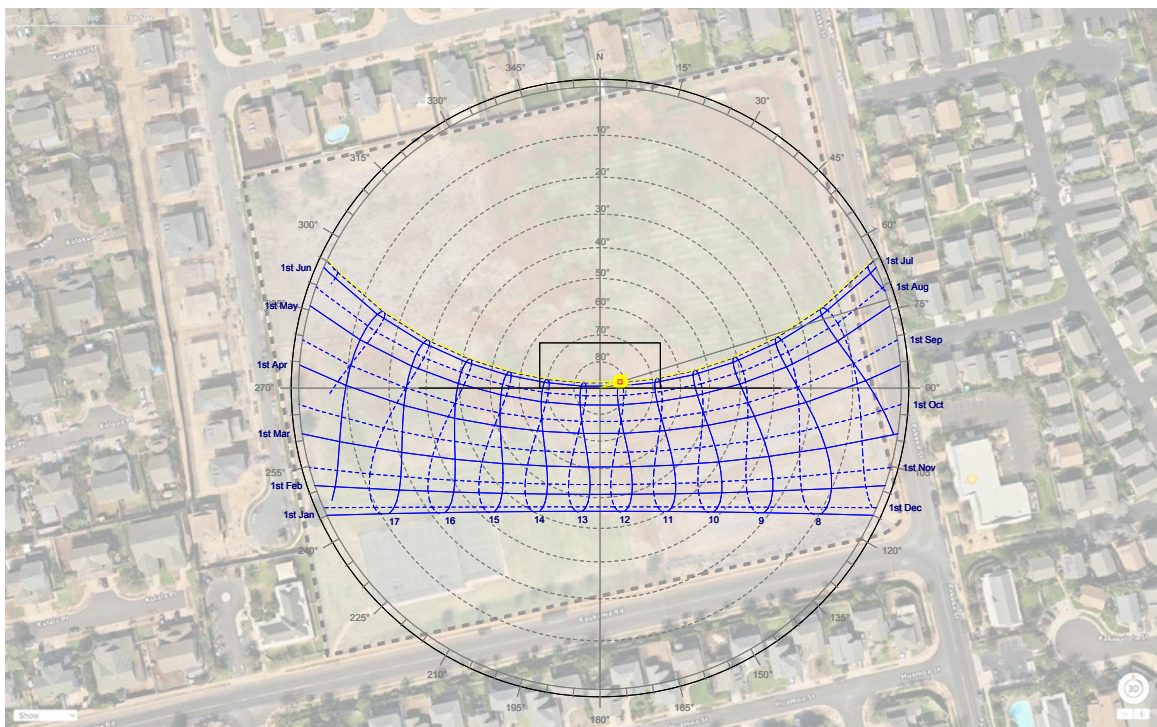
<sup>335</sup> <https://rainfall.weatherdb.com/l/16978/Waianae-Hawaii>

<sup>336</sup> <https://rainfall.weatherdb.com/l/16978/Mililani-Hawaii>

### 3.4.1-2 Pu'u'ohulu Community Park: Micro

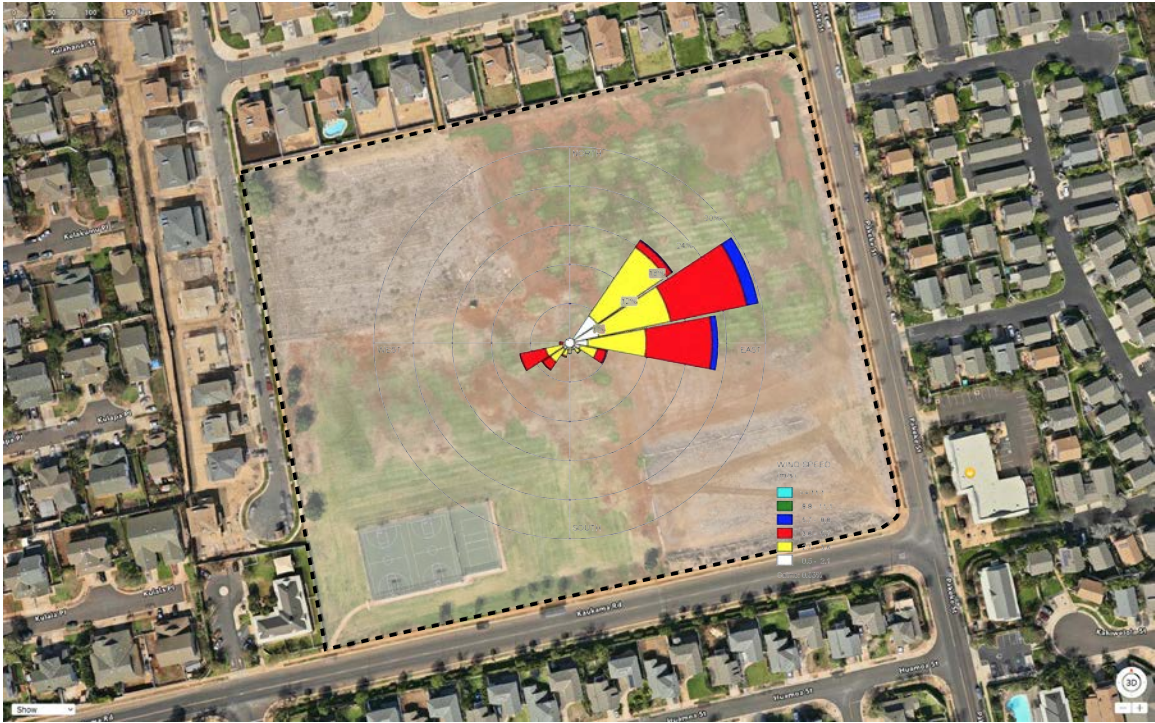


Views and Landmarks



Solar Diagram





Wind Rose



- Sports Facilities
- Education (Preschool)
- Commercial
- Parking

Current Space Usage





Current Tree Cover



- Pedestrian Routes
- - - Proposed Pedestrian Path
- Bike Pathways
- - - Proposed biking path

Pedestrian and Bicycle Circulation

southeast, gases released from the volcano on Hawai‘i Island often end up covering the city in a haze and setting off peoples’ allergies. The 21.4N latitude also places Hawaii within the Tropic of Cancer, where for a very short amount of time, the sun will shine directly on North facing facades in the days nearest the summer solstice.

### *Site Features and Characteristics*

Although set deep within a residential community, views from the site look towards the surrounding mountains. Unfortunately, due to development, the existence of original trees and site-specific vegetation is almost non-existent. Instead a handful of young trees have been planted along the edges of the site and have not grown out to their full size. Overall the site is rather barren with the exception of natural grasses. However, green spaces across the streets in all three directions appear to be well shaded and manicured. The Shops at Sea Country and the child development center are both well maintained and appear to be well respected in the area, however the park is made largely of makeshift facilities. The only two features, the softball field and the basketball/volleyball courts are the only features ever built. An unofficial football field has been erected and a makeshift gravel parking lot made to accommodate large gatherings of people and their vehicles. Street parking does exist along the main road and in designated spaces on Pakeke Street.

However, the absence of paths and a lack of hierarchy of space in the site has led to the formation of a few ‘user experience’ routes that cater to efficiency of time as people have marked footpaths across green patches of land in the direction of the general store. Understandably this would be a major direction of pedestrian flow due to its

programming as the only commercial space in the Pu‘u‘ohulu community. Similarly, if a bike were to be used, it would have to stay primarily on the street and share the road with vehicles. Also, the proposal to invest in a jogging/bike path that circles the site is able to provide a .5mile lap for users. Reiterating an observation made earlier, a flood control ditch, made to protect the homes on the other side of the fence, separates the park from the adjoining neighborhood.





Figure \*\*\*: Site Photos: Pu'u'ohulu Site  
 Top: West facing perspective  
 Top-Middle: corner of Pakeke St  
 Top-Bottom: Left the General Store, Right the preschool  
 Bottom: East Facing Perspective



### 3.4.2 Ala Wai Community Park: Macro



- Bus Routes (Different Colors)
- Current Bus Stops

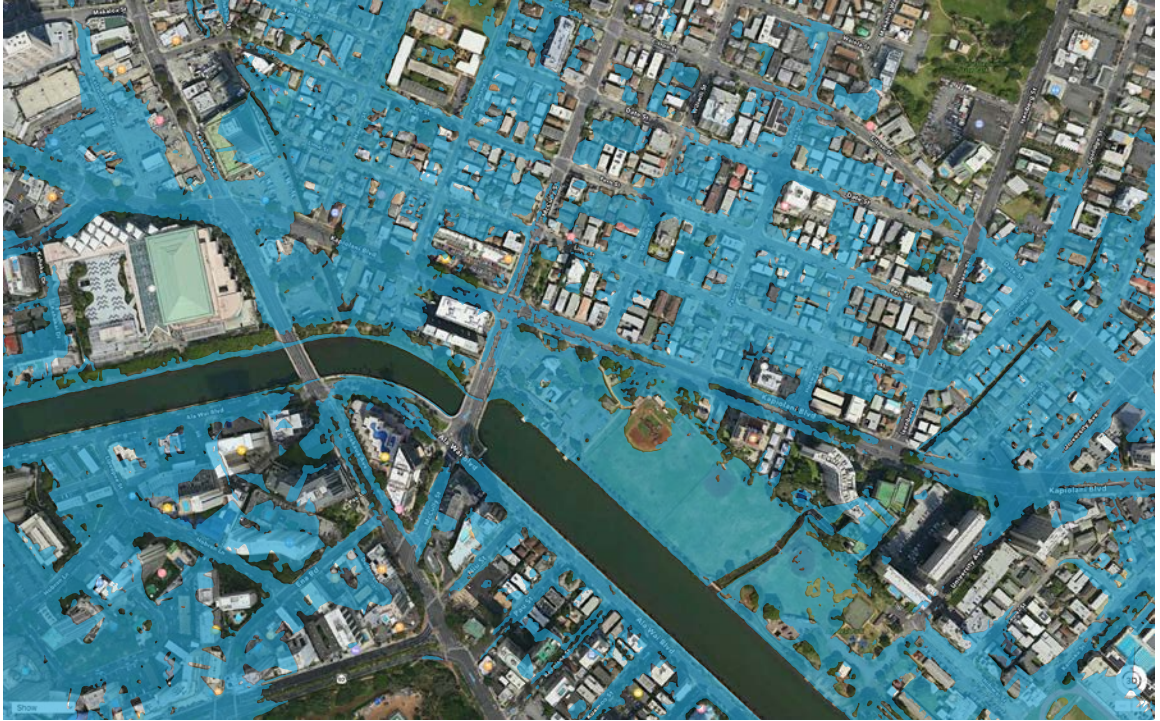
Bus Transit Circulation



- Current Bike Route but highly dangerous
- Proposed Bike lane or trail
- Safe Bike Paths
- Intermediate Bike Paths

Bicycle Circulation





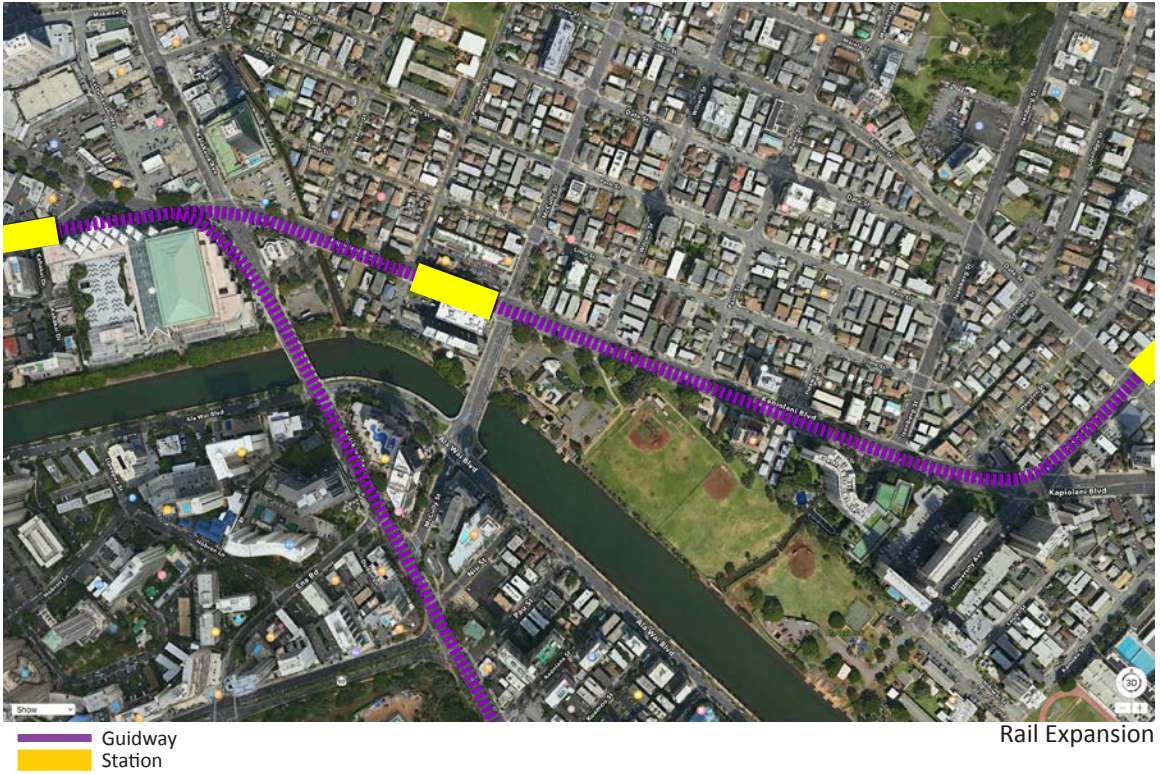
1 meter Sea Level Rise



- Major Road
- Arterial Road
- Auxiliary Road
- Minor Road

Vehicular Circulation





Ala Wai Community Park is located at the bustling intersection of Kapiolani Boulevard and McCully Street as it connects the H-1 Freeway to Waikiki. As is much of Mo‘ili‘ili near Kapiolani Blvd., the site is only 5 feet ASL. To the north is the Mo‘ili‘ili-McCully neighborhood consisting of medium density low-rise and high-density towers. The tributary area of the Ala Wai Centre would extend to Citron Street and overlap with the Stadium Park Centre. Nearly half of the centre’s customer base is foreseen to originate in this portion of Mo‘ili‘ili. East of the site is a series of popular athletic fields (3 baseball fields, 2 soccer fields, Tennis courts), the remaining sections of the Ala Wai Community Park, dog park, canoe shelters, I‘olani Schools, Tokai University and numerous high-density high-rise apartment buildings. Connection to Kaimuki via Date Street and Kapiolani Blvd, the University of Mānoa via University Avenue and other public schools add to the congestion in the area. The site is also bound on the south side by the Ala Wai Canal which separates Waikiki from the rest of the city. Serving to drain the Palolo and Mānoa Valley streams without effecting Waikiki, the canal is often the topic of discussion concerning contamination and pollution. Of recent it has been identified as a major liability in not only disaster scenarios such as hurricanes and tsunamis, but in the future of sea level rise. The local canoe clubs often utilize the canal as a staging ground for practicing for races and other events. Across the canal, entry to Waikiki connects to major arterial roads and sidewalks for that service the district. Westward is the Honolulu Convention Center and Ala Moana Shopping Center mixed use commercial area. Immediately adjacent to the site is McCully Street and the McCully Street Bridge. This corridor remains one of three entry points to West Waikiki. McCully Street is currently

the only access which connects directly to the H-1 Freeway. McCully Shopping Center is also a popular destination for locals and tourists with their wide variety of food options.

It's access along two major traffic corridors makes the site complex in designing a proper parking intervention. During times of traffic, drivers often utilize the local roadsto circumvent congestion caused by the rush hour extra-lane extensions. Alternative transportation to the site is highly accessible. Numerous bus lines intersect the nearby communities. The site itself has a major express and local bus stop that services the 13, 3, 4, 9 and A Express. Nearby stops service the 2 and 2L in Waikiki. The A, 4 and 13 are major lines that service the University of Hawaii Mānoa Campus while the 3 and 9 service Kapiolani Community College near Diamond Head. Do to the high concentration of lines along Kapiolani Blvd., pedestrian traffic (including bicycles) to and from Waikiki is heavily centered on the Diamond Head side of the McCully Bridge. The issue that arises from this movement of people in and out of Waikiki is that the physical constraints of the sidewalk and apprehension of bicyclists to utilize the existing marked bike lane creates pedestrian chaos beside high volume traffic. Being nearly 4 feet across, the sidewalk barely supports two people passing each other, especially since various obstacles such as signs and posts penetrate the walking path preventing a steady flow of pedestrian traffic to cross the bridge. Unfortunately, a once proposed Ala Wai ferry system was never brought to full fruition.

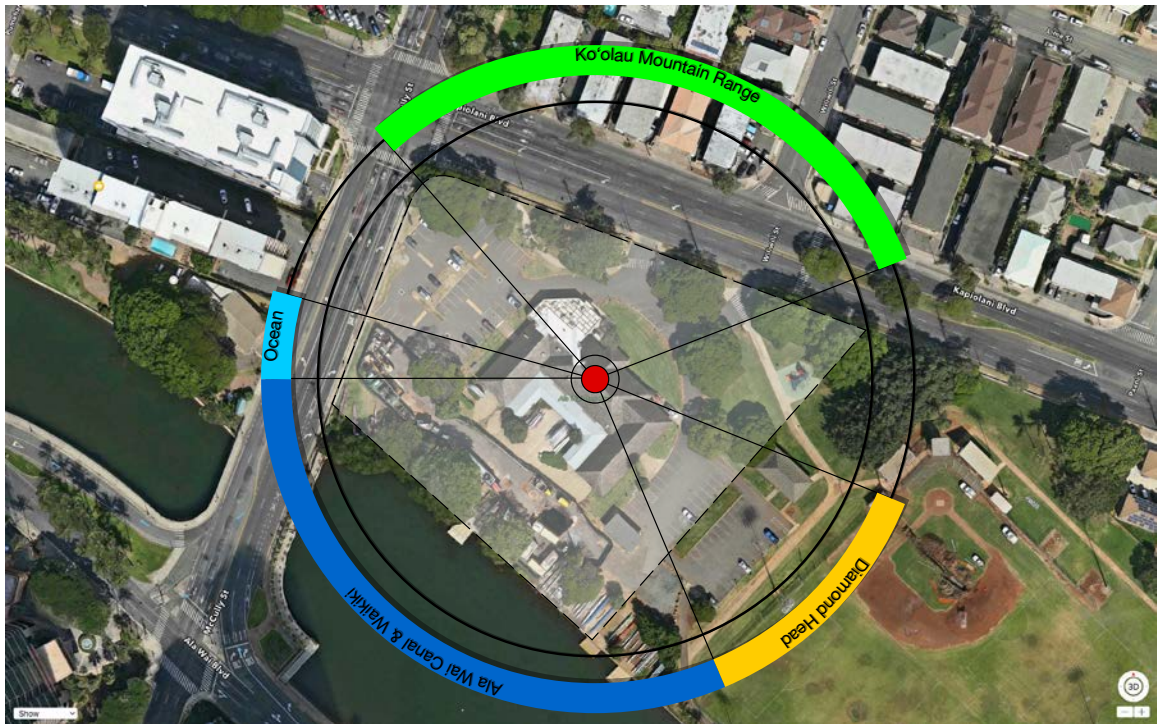
Currently, the City and County of Honolulu highlights the following conditions for bikers, provided they follow proper rules of operation and avoid sidewalk use. Marked

bike lanes currently exist on University Avenue, McCully Street (from Kalakaua to Kapiolani ONLY), Kalakaua Ave and Ala Wai Blvd. Yet each of these lanes are designated for use only by experienced individuals as a safety precaution. Officially, Kapiolani Blvd is considered a lane-share route, but the city has designated it as highly dangerous and discourages use of the route for safety reasons. The only safe route for all bikers is the jogging and bike path that borders the Ala Wai Canal and Golf Course separated from moving vehicles. New lanes are proposed along the entirety of McCully, Ala Moana Blvd., Kalakaua Ave. (into Waikiki) and Eisenberg St. These lanes are to expand on the BYK project for bicycle infrastructure.

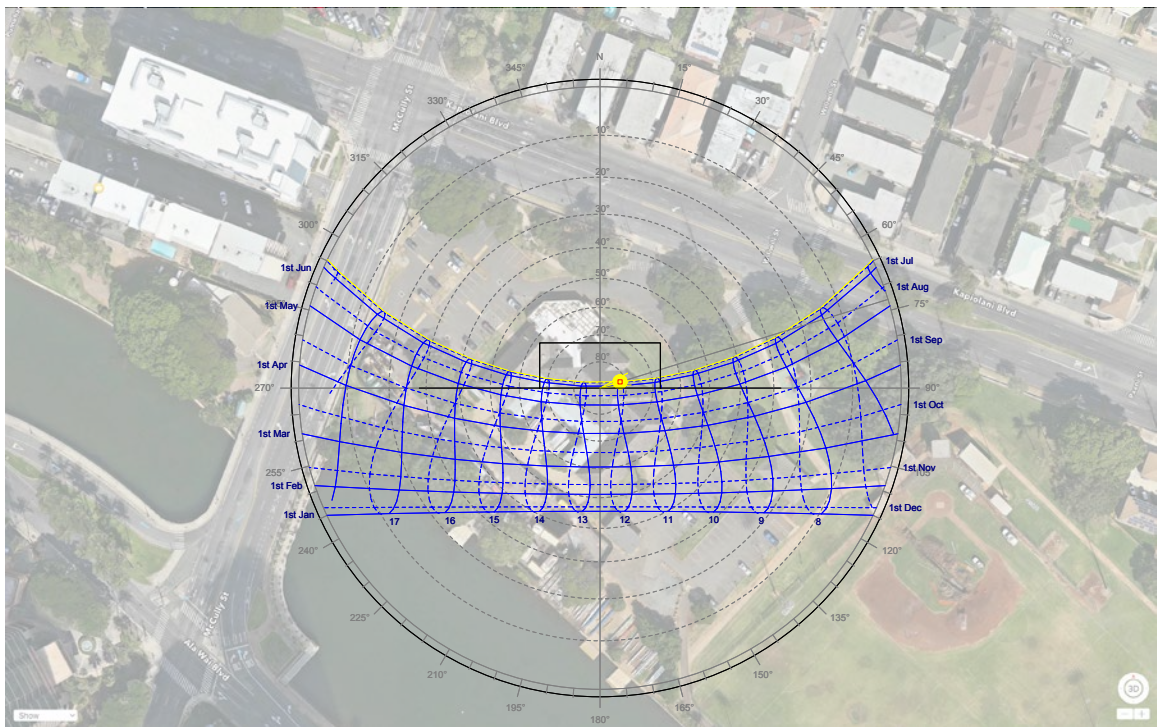
The future expansion of the Honolulu Area Rapid Transit (HART) to Waikiki and the University of Hawai'i at Mānoa foresees that the proposed track will continue from Ala Moana along Kapiolani Blvd. until turning at University Avenue. The proposed station location is to be on the western side of McCully. As a resource for prospective patrons, this form of infrastructure would boost clientele, foot traffic and overall sales. According to preliminary design proposals for what areas the TOD would affect, Mo'ili'ili-McCully was cited as being of little or no impact due to extreme limitation of non-developed space. This could also harken to the maximum capacity currently allowed on the sewage lines for Mo'ili'ili.



### 3.4.2-2 Ala Wai Community Park Site Analysis: Micro



View Corridors and Landmarks



Solar Diagram





— Pedestrian Routes  
— Bike Pathways

Pedestrian and Bicycle Circulation



Parking  
 Canoe embarking and storage

Current Space Usage

### *Existing Plans and Future Proposals*

Inside the primary urban centre, many external factors apply force to the future of the site. Currently the site has three structures built on it; the Ala Wai Canoe Clubhouse, a storage facility and a public pavilion and restroom. Of the total site area of 3.445 acres (150,064 ft<sup>2</sup>), the canoe clubhouse has a total floor area of 18,620 ft<sup>2</sup>. Being within P-2 designation, similar rules that apply to the P-2 designation for Pu‘u‘ohulu Community Park equally apply here. Again, I would advocate for the adoption of a PMX-3 style Park-Commercial Mixed Use zoning. Yet, the complications of the site do not end with this issue. The current building is protected under the Department of Land and Natural Resources (DLNR) State Historic Preservation Division (SHPD). As the application for filing the clubhouse under SHPD protection states, “it is significant for its associations with canoeing.”<sup>337</sup> Similarly the argument was made that the building also exemplifies the Art Deco movement of Hawaii in the 1930’s due to its curved entry walls, iron gates, and hipped roof. This does not exempt the building, however, from being altered, removed or relocated. In fact, the Department of Planning and Permitting (DPP) has shown a number of additions and repair work needed to maintain the building and the growing capacity of resident canoes. In addition to the building, the coral block walls that restrict the public’s access and maneuverability along Kapiolani Blvd. and McCully Street are included in the protection document.

In the event of a flood or other natural disaster, the clubhouse would be among the first victims of the event. A proposal by the Ala Wai Canal Project and the Army Core of Engineers list the site as being potentially adversely affected by the implementation of a

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<sup>337</sup> SHPD Form

flood wall project that aims to protect the state and surrounding communities from potentially crippling natural disasters. Their recommendation was to document the building under conditional review of final design.<sup>338</sup> With this information, It is my recommendation that the building be documented and removed with the reason being of high operational/maintenance costs, potential destruction caused by natural disasters and re-enforcement of the surrounding communities by construction of the Ala Wai Canal Project. However, understanding the importance of the site and its relavence to the activity of canoeing, proper accomodations should be made to provide replacement facilities for existing facilities being displaced. This would include the replacement of canoe storage areas, community gathering spaces and offices for park personel.

#### *Climactic Conditions*

Aside from the complications presented by the SHPD status of the existing structure, the location affords views of the Ko‘olau Mountain Range to the North, Diamond Head to the East, The entire length of Waikiki and the Ala Wai canal, and a tight view of the ocean as the canal bends towards the Ala Moana Marina. Similarly to the Pu‘u‘ohulu site, trade winds typically originate from the northeast, with warmer winds sometimes coming from the southwest. The site’s location below the mouth of Mānoa Valley has an average annual percipitation rate of 22in due to the rain shadow effect.

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<sup>338</sup> DRAFT FEASIBILITY STUDY REPORT WITH INTEGRATED ENVIRONMENTAL IMPACT STATEMENT, Appendix F, Cultural Resources

### *Site Features and Characteristics*

Existing Vegetation consists mainly of large mature trees with well developed canopies. Recently two larger trees were removed for unknown reasons and the protection of the remaining trees should be of significant importance. A larger community garden project is located a short walk towards I‘olani Schools to the east where community members rent small plots of land in which to grow vegetables for personal use. These practices should not only be protected but also encouraged, with programming directly targeting these home-grown producers of food. Like-wise, the Ala Wai Canal is under pressure to implement more water retention measures as to minimize any adverse effects runoff may have for water level and flood control. To mitigate this issue, bioswales and other water retention methods should be implemented in the site.

Circulation through the site is highly impacted by two factors. The first is the presence of the perimeter walls. The limited inlets for pedestrian use makes the park unnecessarily inaccessible, especially along McCully Street. This requires even people traveling along the canal shoreline to walk toward the McCully St and Kapiolani Blvd intersection to turn left in to Waikiki. This is a common occurrence in the Ala Wai Promenade section of the park, where the promenade breaks as no cross walks allow direct access across busy intersecting streets. The second is the location of the bus stops along Kapiolani Blvd. where large populations of students and other people travel from across the bridge in Waikiki to access the direct buses along this corridor. A fair amount of pedestrians come in and out of Mo‘ili‘ili, however their movement is spread across multiple access points, while the majority of people walking from Waikiki would pass through the same

segment of street. In Figure \*\*\*, the circulation patterns appear to be forced into outlets of movement, whereas a more natural transition from the constriction of the bridge lends to a more enjoyable and safe transition between two communities.

Vehicular circulation is also important to this site because of its multifunctional park/sports area. Having two entries and exits, the current facility has enough parking for 89 automobiles. Parking needs to be preserved as much as possible, especially since the proposed centre would increase the onsite occupancy throughout all hours of the operational day. In addition to the automobile, canoes also require special programming requirements to operate them. The current capacity of the canoe club is 100 canoes, but due to space limitations, excess canoes are stored on the shoreline. In order to launch effectively and efficiently, it would be ideal if the storage opened directly towards the water and boat ramps.





*Figure 77: Site Photos; Ala Wai Community Park Canoe House. Author's Personal Photos*

*Top: Ala Wai Trail*

*Middle: McCully side parking lot*

*Bottom: Canoe house entry*

*Right: Trail towards Diamond Head*



*Figure 78 Site Photos; Ala Wai Community Park Canoe House. Author's Personal Photos*

*Top: Ala Wai Park Parking Lot*

*Middle: Neighboring towers in Mo'ili'ili*

*Bottom: Trail connection to the Ala Wai*







*Figure 79 Site Photos; Ala Wai Community Park Canoe House. Author's Personal Photos*

*Top: Ala Wai Canoe House Apron*

*Left: Overcrowded canoes on the lawn*

*Right: Narrow Sidewalk to Waikiki*





*Figure 80 Site Photos; Ala Wai Community Park Canoe House. Author's Personal Photos  
Narrow Sidewalk across the McCully Bridge*



*Figure 81 Site Photos; Ala Wai Community Park Canoe House. Author's Personal Photos  
Scenic Views of Waikiki and Diamond Head*

## 4 | Design

### 4.1 Hawker Typologies

The Singaporean Hawker Centre developed to correspond to issues in density, distribution, labor and public resources. The research produced in the second chapter of this work on the development and operations of the Singapore Hawker Centre can be utilized to inform on the design of a guideline that will inform on the design of a proper centre that responds to various characteristics related to site, culture, populations and urban context. Four factors are pivotal in the design of the hawker centre: The Stall, The Roof, The Services, and The Seating Area

#### **4.1.1 The Stall:**

##### **How Many Stalls?**

The basic space planning feature of the Hawker centre is the appropriation of stalls throughout the building. The Singapore centres provide food to a population of 5.2million. To figure out the ratio of hawker stall to population the following calculation can be made:

$$\frac{5,200,188 \text{ pax}(SG)}{13,979 \text{ hawkers}(SG)} = 372 \text{ pax/hawker}$$

$$\frac{1,420,000 \text{ pax}(HI)}{372 \text{ pax/hawker}} = 3817 \text{ hawkers}(HI)$$

If we were to utilize the Singapore model to provide a ratio of hawkers to persons, across the state of Hawai'i, the hawker centres will need to provide 3,817 hawker stalls. This is at a ratio of 1:372. Each centre should maintain a relatively similar ration to the population the centre serves.

### What Type of Stalls?

There are three types of stalls identified by the Singapore National Environmental Agency: Sundries, Market and Cooked Food.

- Sundries: 18%<sup>339</sup>
  - Sundries, according to Merriam-Webster, are miscellaneous small articles, details, or items.<sup>340</sup> These stalls may sell anything from cosmetics to spices and even clothing.
- Market: 40%<sup>341</sup>
  - Market stalls provide fresh produce or meat, poultry or fish.
  - In Singapore, limited land prevents local agriculture from becoming a viable market, however Hawai'i has extensive resources for local produce and could provide an outlet for farmers wishing to sell their produce.
- Cooked Food: 42%<sup>342</sup>
  - Prepared food
    - On site preparation and fresh cooked food
  - Drinks Stall
    - Prepared drinks and fresh fruit

### How Big are the Stalls?

Stalls sizes vary significantly depending on use. According to the NEA's report on bids for hawker stalls through March 2012-September 2015 the average area of each type of stall has been calculated:<sup>343</sup>

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<sup>339</sup> Sing Stats Hawker Stats

<sup>340</sup> Merriam-Webster

<sup>341</sup> Sing Stats Hawker Stats

<sup>342</sup> Ibid

<sup>343</sup> NEA List of successful tenders

- Sundries Stalls
  - $5.8\text{m}^2 = 62.4\text{ft}^2$  (7ft 10in x 7ft 10in)
- Market Stalls
  - $8.1\text{m}^2 = 87.2\text{ft}^2$  (9ft 4in x 9ft 4in)
- Cooked Food Stalls
  - $7.65\text{m}^2 = 82.3\text{ft}^2$  (9ft 1in x 9ft 1in)

In a Hawaiian market the stall should respond to the influences of the imperial measurement system and furniture as well as equipment that has been developed to meet specifications designed for use in the United States. To simplify this system, I believe a nominal measurement of 10ft x 10ft to be appropriate for the development of a prototype and used in predesign and proposal stages. Actual stall size may vary and be dependent on the population and function it serves. **Typical Stall Size** (*Hawai'i*): 100ft<sup>2</sup>

#### *What is included in the Hawker Stall?*

The stalls should provide minimum required operating equipment including but not limited to items such as: a sink, exhaust hood, stove, working counters, drainage and electrical hookups. The NEA application to perform additions and alterations lists several allowable and prohibited equipment installed within the stall and their prescribed positioning and use.<sup>344</sup>

- Signboards
  - Used to display menu items and stall name
  - Must remain within confines of the board and shall not include any additional attachments or alterations
  - Fixed uniformly across the centre at a prescribed height above the entrance of the stall
- Lights, Electrical Fittings, Control Units, Outlets

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<sup>344</sup> See Appendix \*\*\*

- Preinstalled within the confines of the stall and not permitted to extend out of said stall
  - Alteration allowable but only with proper approval from regulating authority of the centre
- Sinks and Taps
  - A sink shall be installed for the use of the tenant and should not be made smaller than current regulations
  - All taps should be positioned away from the entry of the stall as to preserve the dryness of the common areas
- Stainless Steel Cabinets, Shelves, etc....
  - Working counters shall be provided
  - Any additional cabinets, shelves, etc.... are to extend not higher than 8ft above the floor plane to the top of the unit.
- Equipment
  - Exhaust System
    - Preinstalled in prepared cook food stalls
    - **All cooking activities**, whether or not oil and smoke is produced, shall be done under exhaust hoods or within effective distance to mitigate unnecessary heat gain
    - Installation of stoves are required under exhaust hood
  - Gas Canisters or Cylinders will not be permitted on safety concerns
- Maintenance Facilities
  - Grease Catch and Filter
    - Must be cleaned regularly
  - Floor Trap
    - Must be cleaned regularly
    - Unobstructed
- Materials
  - Tiled walls and floors to assist in easy sanitation and cleaning at the end of the work day.

### *Can the Stall Be Expanded?*

Expanding of the stall into a neighboring stall is allowable as long as the partition dividing the two stalls are non-structural or tamper with provided utilities. Upon returning the stall to the regulating authority responsible for the management of the centre, all facilities must be returned to its original or better state than at start of lease.<sup>345</sup>

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<sup>345</sup> See Appendix \*\*\*



### *How are the Stalls Arranged?*

K.R. Rao and J.C. Ho described in 1978 how hawker stalls were arranged in clustered rows that run the length of the centre.<sup>346</sup> If the building can support more than one row, the two rows should be separated by a common seating area typically 30ft in width. This provides adequate space for a series of tables and chairs, as well as enough walking space for patrons and operators along the storefronts of each row of stalls. Careful attention was given to this space in the numerous HUP upgrades which emphasized accessibility and safety by keeping the common areas free of obstruction and hazardous materials.

### **4.1.2 The Roof**

Pre-HUP roof structures of existing centres have been described by researchers Rao and Ho as being pitched roofs of 16ft-26ft in height and made of cheap green Spandek sheets as to shade the programs underneath from the equatorial sun. Rectangular shapes appear to be favored over square, as the narrower building responds better to the natural ventilation. The HUP saw to the reconstruction of many roofs across Singapore, which introduced a number of different roof designs, but all with similar functionality. Further studies in 2003 by Wong et. al propose that a number of interventions could be utilized to increase ventilation under the roof structure.<sup>347</sup> He found that by raising the eaves of the roof 4 feet above the height of the stalls, cross ventilation would force heated air trapped under the pitch of the roof out of openings provided for ventilation purposes. Also, the

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<sup>346</sup> Rao K.R. and Ho J.C., "Thermal Comfort Studies in Hawker Centres in Singapore", Building and Environment, Vol. 13, Pergamon Press Ltd. 1978, pp. 161

<sup>347</sup> Wong, N.h, J. Song, G.h Tan, B.t Komari, and D.k.w Cheong. "Natural Ventilation and Thermal Comfort Investigation of a Hawker Center in Singapore." *Building and Environment* 38, no. 11 (2003): 1335



widening of corridors and removal of floor to ceiling barriers such as walls sectioning off services from the public programming proved to be the most beneficial combination when paired with elevating the roof above the height of the stalls. This helped not only provide sufficient ventilation of heated air in the upper reaches of the roof, but also comfortable ventilation and circulation for the people sitting at tables or ordering food. No size limits to the roof were reported, but mechanical assistance in roof ventilation had also been proven to be beneficial in removing radiant heat from hawkers. Some basic guidelines for design are to follow:

- Roof Height:
  - Peak: 16ft – 30ft
    - Depending on the size of the hawker center and surrounding environment
  - Eaves: 12 ft minimum
    - This assumes a stall partition height of 8 feet and allows for increased ventilation
- Roof Form:
  - Canopy structure as to efficiently shed rain, wind and protection from the sun
  - Complex geometries prove difficult to naturally ventilate and often require mechanical assistance (ie. Lau Pa Sat Market, 6 Tanjong Pagar Plaza)
- Roof Materiality:
  - Lightweight construction
  - Typically built of steel or wood members with corrugated metal or standing seam metal roof cladding often painted green for thermal heat gain efficiency and commonly include a metallic radiant barrier.
- Ventilation:
  - Typically feature a split roof shed design
  - Other features include skylights, heat chimneys, horizontal louvers, and mechanically assisted ventilation
- Width:
  - Size of roof varies depending on number of rows and desired level of protection of along the outside perimeter of the building from the elements
    - Quick reference guide should be:

$$(.5 \cdot \text{center corridor}) + \Sigma(\text{width stalls}) + \text{width perimeter} + \text{width eaves} \\ = 1 \text{ side}$$

- Surrounding Environment:
  - Protection from Elements
    - Eaves should provide reasonable protection from the sun and rain, as well as encourage natural ventilation
  - Landscaping aides:
    - Utilization of the natural landscape to make the centre more humanistic is highly desired
    - Eco-centered interventions such as bioswales and roof gardens have been proven to also impact to comfort levels of patrons<sup>348</sup>

#### **4.1.3 The Services**

Little is mentioned on the topic of offices and services provided to the Singapore Hawker, however with the information provided, program guidelines may be created based on a composite of information collected from interviews with local food industry personnel in Hawai‘i and information entailed within documents regarding upgrades, health restrictions and safe food handling in Singapore. Services include loading/unloading areas, cold storage and refrigeration, dry storage, clean food preparation areas, disposal areas, restrooms, dish collection and washing facilities, mechanical/plumbing rooms, security and multipurpose facilities for community utilization. Due to limited literature on the specific guidelines related to hawker centers, estimates of guidelines are provided below:

- Loading/unloading areas
  - According to interviews with local businesses, their restaurants hold enough produce and meat for two days worth of operation. This means that when supplying the Hawkers, relatively large orders must be placed

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<sup>348</sup> Ministry of the Environment and Water Resources, Hawker Centres Public Consultation Panel. "Recommendation Report of Hawker Centres Public Consultation Panel." Singapore. 2012. Accessed November 12, 2015. <http://app.mewr.gov.sg/data/ImgCont/1655/PCP%Recommendation%Report.pdf>

at once to maintain a consistent cycle. More deliveries and larger trucks means adequate loading areas must be set aside for normal operation.

- *Cold Storage/Refrigeration Rooms*
  - Local business interviews identified that they had approximately 90cu.ft. of cold storage space spread out across four refrigerators. In the hawker centre, 90cu.ft. would be reserved for each cooked food stall in the communal refrigeration room. Additional cold storage may be installed within the confines of the stall at the leasee's expense. Drinks stall and fruit stalls shall be pre-equipped with refrigeration equipment.
- *Dry Storage*
  - Dry storage may be accommodated either in storage spaces within the stalls or in the common preparation space. Much of the dry storage associated with brick and mortar restaurants is used to accommodate dishware, napkins, and other utensils that are not related to the food products being sold. These types of goods are typically controlled and stored by the facilities management and contracted front of house teams.
- *Food Preparation Space*
  - Due to limited space within the stall, the majority of food preparation should be completed in the designated preparation space. Each hawker will be afforded 6 linear feet of preparation counter space, including a sink to wash fresh produce. The facilities promote the utilization of hygienic conditions, where previously Singaporean hawkers could be found preparing food on the same tables patrons would later dine at.
- *Disposal Areas*
  - Sufficient garbage disposal should be provided
  - Recycling should be promoted
- *Restrooms*
  - A men's and woman's restroom with ADA accessibility should be provided on site with a proper allotment of toilets to occupants.
  - Employees may utilize the public restroom.
- *Dish Collection and Washing*
  - Designated shelves and/or windows for front of house teams are to be provided for dish collection.
  - Appropriately sized facilities should accommodate the volume of crockery and utensils being used by both the hawkers and patrons.
  - After washing, dishes shall be returned to the hawker that the dish belongs to.
- *Mechanical and Plumbing Facilities*
  - The mechanical room should be provided to provide a central control point for the building's normal electrical and functional operation.
  - The plumbing room should be provided to provide a central control point for the building's normal plumbing fixture and return operation.
  - Fire suppression systems must also be housed in the plumbing facilities.

- *Security and Custodial Rooms*
  - Security shall be present on the premises as to deter vandalism and other various forms of harmful actions against the building, hawkers, or patrons.
  - Custodial rooms will provide adequate resources for the contracted custodians to maintain the building.
- *Community Spaces*
  - Flexible community gather rooms or spaces should be provided to encourage the continued use of the park as a community resource even with the proposed intervention.
- *Others*
  - Designated hand washing sinks as per required by code.
  - Elevators are required when needed.

#### **4.1.4 The Seating Area**

The seating area is crucial for the success of the hawker centre. It provides a comfortable, easy to clean, durable space that allows people to come together. Always, the seating is protected from the threat of rain. Similarly, they are also protected throughout the day from direct sunlight. Whether the tables are rounded, standalone or arranged in long benches perpendicular to the stalls, the seating area brings people together into a mix where the wealthy and the poor are allowed to mix without prior pretenses. The seating arrangement of a hawker centre is also done in a way that encourages people to freely become absorbed by the site. Unlike many food court spaces, the seats do not attempt to become a separate space from the hawkers. They are integrated into the circulation and spatial planning practices that help shape the entirety of the building.

- The Seats
  - Round or bench-like tables
  - Fixed with fixed seating
  - If a round table, seat usually number 6-8 seats
  - ADA accessible tables required
  - Each cooked food stall should have approximately 2 tables directly in front of the stall (seating capacity per stall: 12-16 seats)

- Based from a calculation of meal price and total revenue needed to make a reasonable profit.<sup>349</sup>
- Seating shall be reasonably protected from the elements such as Sun and Rain

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<sup>349</sup> Show this calculation on business in a Hawker Stall

## **4.2 Ala Wai Centre**

### **Ala Wai Community Park Hawker Centre**

#### **4.2.1 Design Opportunities**

A number of opportunities for this site have been identified in the site analysis for the centre's location along the Ala Wai Canal. The following analysis lists some strong opportunities that the future hawker centre may utilize in its design and function.

#### **Flood Control:**

The current site is projected to be affected by the installation of a flood wall along the Ala Wai meant to protect the Kaimuki, Mo'ili'ili and Ala Moana neighborhoods from potential flood risks. The potential of this opportunity for the hawker centre would be integrating the building into the flood wall system. The centre could exist as a permeable point for circulation throughout the park and connecting walking paths. Such a manner of integration could include earthwork build-up, floodable programming, structural floodwalls and elevated decks or plazas. The retention of site run-off from rain water could be contained by bio swales, rain gardens, roof water collection cisterns and other water use and re-use methods preventing water from contributing to water level rise and contamination with the brackish water in the canal.

#### **Nearby Bridge:**

The McCully Street bridge which connects Mo‘ili‘ili to Waikiki passes the site on the west. A high traffic corridor due to its direct connection to the H-1 freeway to the north results in traffic congestion throughout the day. The 6 lane bridge (2-into Waikiki and 4-out) has a relatively narrow pedestrian sidewalk (~4ft approx. with numerous obstructions) and major water supply and sewage pipes that service Waikiki. These pipes are located in secure housings along the edge of the sidewalk and covered with a grate (+~4ft approx. each) The grates are restricted from being walked upon due to the installation of large concrete planters and metal guardrails. Fishing is not allowed from the top of the bridge.

The opportunity here is in the increase of capacity that the bridge could bare as well as the creation of a safe and comfortable walking path for pedestrians who often have to maneuver around bicyclists that refuse to use the existing bike lane provided on the street. The widening of the sidewalk from 4-feet to 8-feet would allow for a much more enjoyable walking experience. The second pipe is housed in a concrete encasement that is raised nearly waist high along the outermost edge of the bridge facing Diamond Head. Existing planters may be placed on top and a new space for the meeting of friends and public can be allowed along this scenic crossing.

The added height of the bridge relative to the ground plane may also allow for a direct connection to the hawker centre without having to utilize ramps or stairs from the existing 5ft ASL grade on site. If the hawker centre were to be elevated above grade, the connection between the bridge to Waikiki and the the Ala Wai Park Trail may be made



continuous and encourage increased use of the trail as a walking path for nearby residents. Circulation through the site should respond to the level of traffic, both vehicular and pedestrian, that travels along the western limits of the site boundaries and encourage the safety of pedestrians at all cost.

### **Sports and Recreational Facilities:**

The adjacent baseball and soccer fields currently attract crowds from various nearby schools, clubs and communities with games being played regularly. Public and Private schools, West and East Oahu communities and people of different economic backgrounds meet to play sports. During events, audiences bring families to bar-b-q, play, and root for their respective teams. During these times the parking lot tends to be full. The existing canoe club also draws a crowd as teams practice racing on the Ala Wai Canal. A boat ramp is provided on site and could potentially be adopted to accommodate a future water taxi. Areas that connect the hawkers to the sports facilities should be utilized, especially during times of games where many of those attending could potentially become patrons to the centre during and after a game.

The current building also provides rentable rooms for classroom space and various other community activities. Preserving the existing community facilities could continue these programs and encourage greater attendance due to its association with the hawker centre. Multi-purpose community spaces provided will help to ensure the longevity of these community programs. Administrative spaces for park personnel should also be accommodated in the planning of the centre.

**Nearby Shopping Centre:**

McCully Shopping Center is across the street and currently highly trafficked by both locals and tourists. Existing restaurant spaces in the centre consist of Chinese, Vietnamese, Korean, Japanese, Local, drinks and dessert restaurants. The prospect of opening a centre across the street should not deter customers from visiting the restaurants listed. Similar to a shopping mall with a food court, the hawkers provide a somewhat different experience from that of a sit-in brick-and-mortar establishment. The projected increase of pedestrian flow could in-fact reinforce the restaurants and their walking customer base. A Taco Bell and Pizza Hut are on the same site as the shopping centre.

#### **4.2.2 Design Intent**

##### **[IMAGE CONCEPT DRAWING]**

The Ala Wai Hawker Centre aims to create a permeable resource for the community while protecting urban Honolulu from natural disasters and sea level rise.

The goal of the hawker centre is to reinforce and protect the neighborhoods around it from harm. Elevating the hawker centre 3 feet above grade, the proposed flood wall will connect to the building to complete the flood wall barrier. A direct connection may be made to the McCully Bridge due to this increase of height and allow for a higher capacity of people traversing between Waikiki and the McCully-Kapiolani Blvd intersection. The construction of the new centre would remove the existing canoe club and community building listed under the Hawai'i State Historic Preservation Division's list of protected places. However, it should be noted that as prescribed in the site analysis section of the last chapter, all attempts should be made to retain the existing facilities displaced by the hawker center. This would include the storage of canoes and other facilities associated with sports and park administration.

Utilizing earthwork to create the necessary flood barrier, the 3-foot rise will form a terraced level to act as transition between the ground, the street and the hawker centre level. In order to create an appropriate level on the ground floor for the canoe house facilities, the main hawker programming has been elevated six additional feet above the flood barrier (9 feet above grade or 14 feet ASL). Yet, while creating a water tight barrier, circulation throughout the building and surrounding sites are preserved to enhance and promote safety, increased utilization and community interaction. As sea

level rises, the building can adapt and introduce to the Mo‘ili‘ili community a new waterfront and staging ground for the community .

#### 4.2.3 Adjacency Diagramming

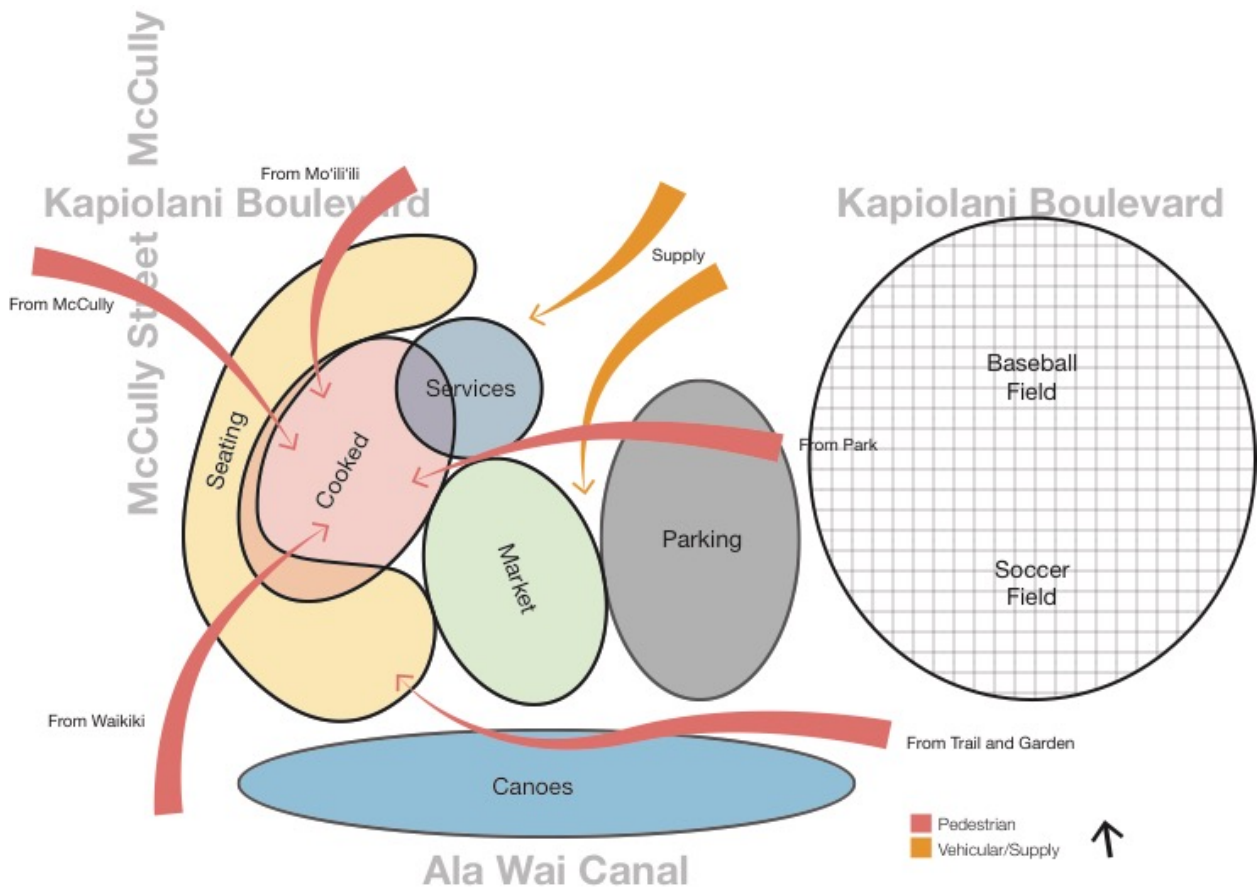


Figure 83: Ala Wai Community Hawker Centre Adjacency Diagram

Identifying a proper layout for the centre was largely determined by the placement of the central services programming of the building. Being the only enclosed space, careful attention has to be placed on how the building and the hawker canopies intersect. The location of the services core was determined to be nearest to the vehicular entry along Kapiolani Blvd to make loading and unloading of goods and materials efficient. The cooked food programming of the centre is highly dependent on other programs in order to function. Most critical would be the need for the services (cold storage, preparation area, dishwashing, etc....) to overlap with cooked food stalls to provide an easily accessible

route to all of the necessary services for operation. Similar to the Blk 341 Ang Mo Kio Centre discussed in the HUP section of Chapter 2 due to the various smells and litter produced by them, the market stalls have been largely removed from the cooked food programming and attached to the services and cooked food programming without overlap. The development of this area as a multipurpose space when market hawkers are not present can be utilized by sport spectators as a mezzanine that overlooks the fields to the east and canal along the south. Unlike a traditional food court where diners sit at tables in the center of a ring of restaurants, the seating area for hawker centres have to permeable and readily accessible to the general public. In practice, wherever there is major public circulation, there should also be seating for patrons. For the Ala Wai Community Park site, circulation largely comes from outside the site on three sides. Stalls typically have tables placed directly in front of them, the seating area and cooked food areas overlap.

#### **4.2.4 Final Design**

The following pages document in detail the proposed Ala Wai Hawker Centre for Mo‘ili‘ili South. Incorporating the recommended programs described by the preceding research, the centre spans three levels and highlights connectivity to pedestrian pathways towards each community surrounding the site. Although sharing similar features to the Pu‘u‘ohulu Hawker Centre to be discussed later, the site responds to a very different clientele. Catering to a high density population, tourists, people using public transit and various other populations that define urban Honolulu, the centre responds to the model developed by Singapore by providing 74 stalls mostly adhering to the ratio of programming previously recommended.<sup>350</sup> Emphasis on circulation patterns has been placed at the utmost importance as it is key to the development of a successful urban hawker centre that bridges two or more communities. Spaces should be inviting and encourage interaction at a variety of scales.

#### **Quick Information:**

Number of Floors	3	
Total Protected/Enclosed Area	50,451 ft <sup>2</sup>	4,687 m <sup>2</sup>
Total Rentable Floor Area	21,845 ft <sup>2</sup>	2,029 m <sup>2</sup>
Building Efficiency Ratio <sup>351</sup>	42.7% BoH	57.3% FoH
Total Hawker Stalls	74 stalls	
Cooked Food	34 stalls	45.9%
Market	28 stalls	37.8%
Sundry	05 stalls	6.8%
Drinks	07 stalls	9.5%

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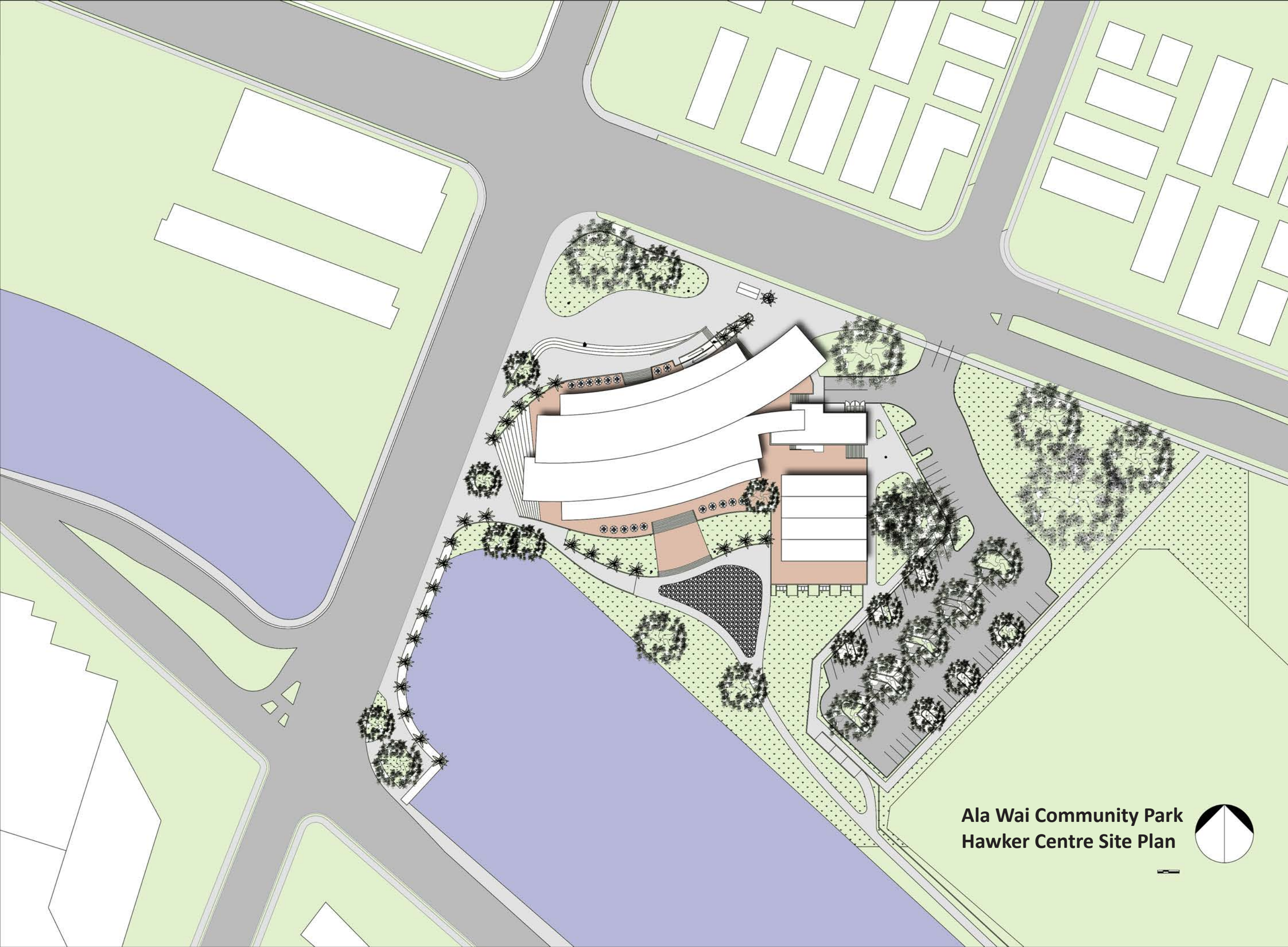
<sup>350</sup> Page \*\*:42% Cooked Food, 40% Market, 18% Sundries

<sup>351</sup> For the purposes of this study this will be a measure of rentable space versus public and non-rentable space (park offices, restrooms, seating areas)

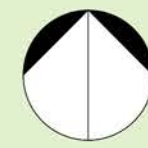
Back of House (BoH): all cooking, storage, preparation, and rentable space

Front of House (FoH): all public and non-rentable space

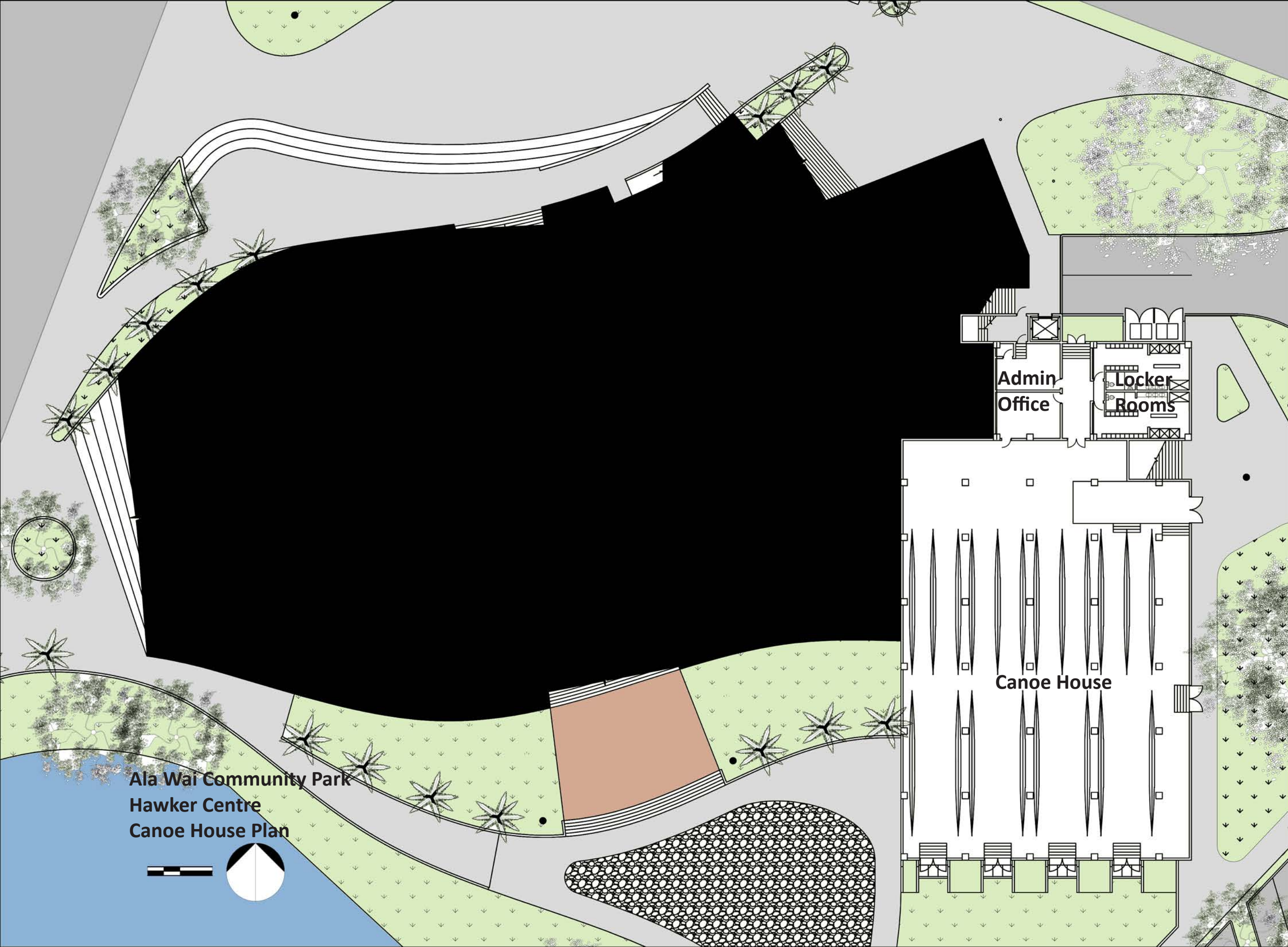




**Ala Wai Community Park  
Hawker Centre Site Plan**







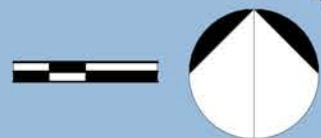
Ala Wai Community Park  
Hawker Centre  
Canoe House Plan



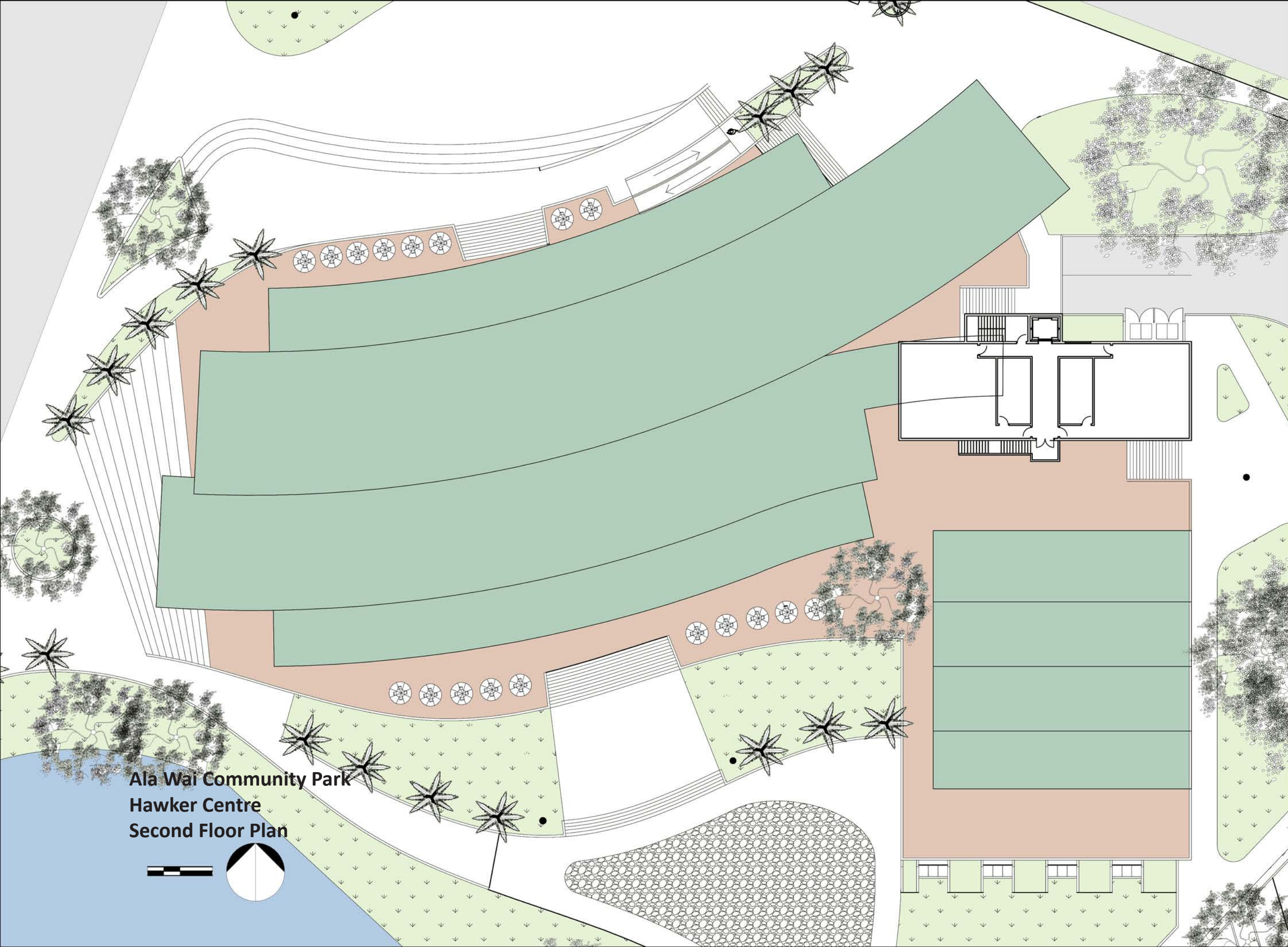




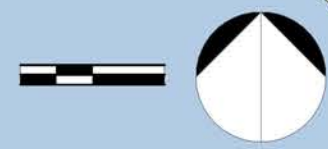
Ala Wai Community Park  
Hawker Centre  
Hawker Floor Plan





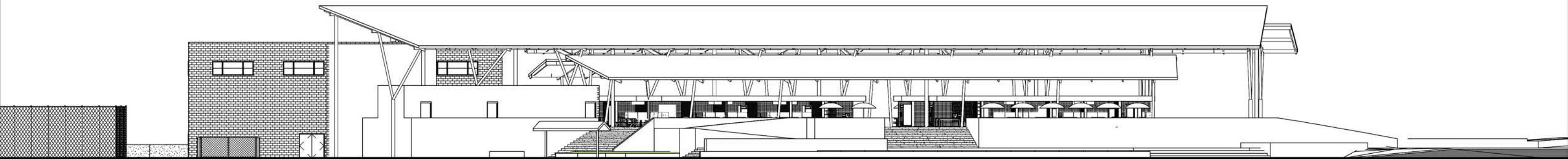


Ala Wai Community Park  
Hawker Centre  
Second Floor Plan

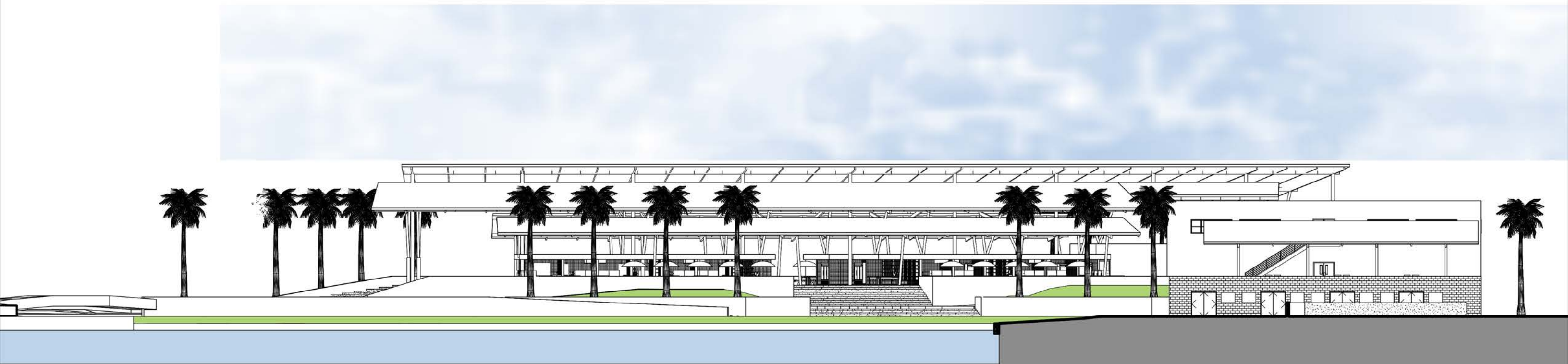




Ala Wai Community Hawker Centre  
Elevations

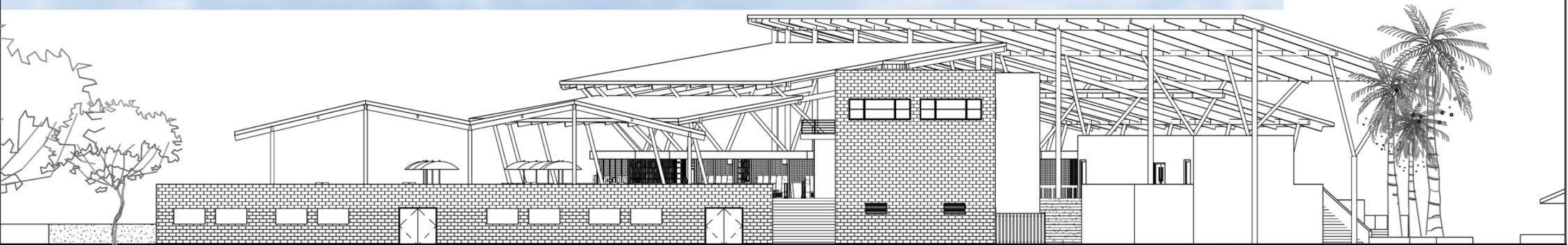


North Elevation

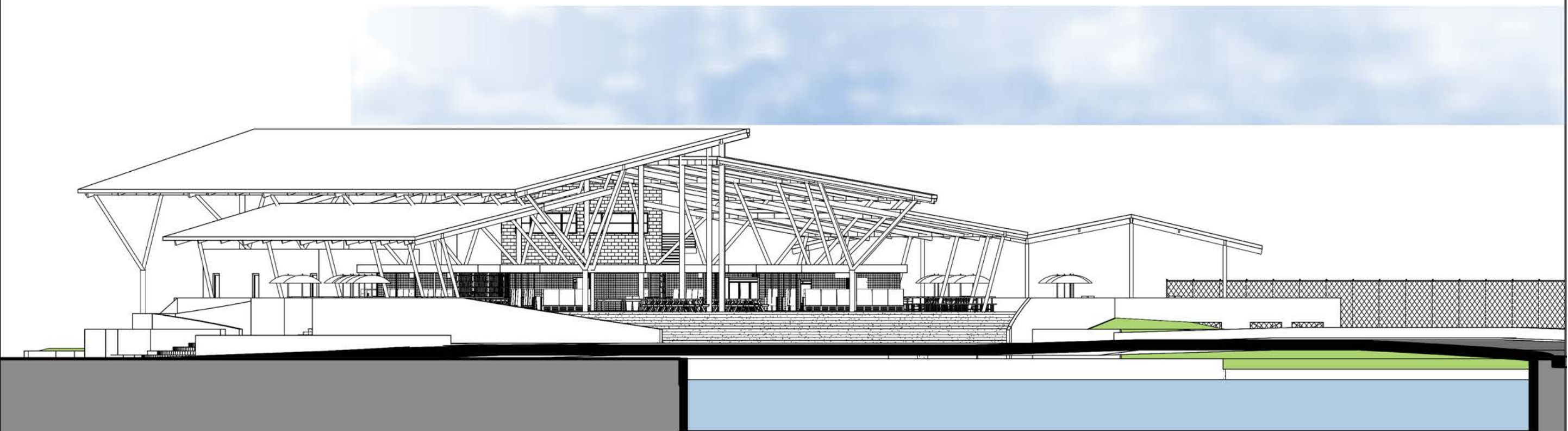


South Elevation

**Ala Wai Community Hawker Centre  
Elevations**



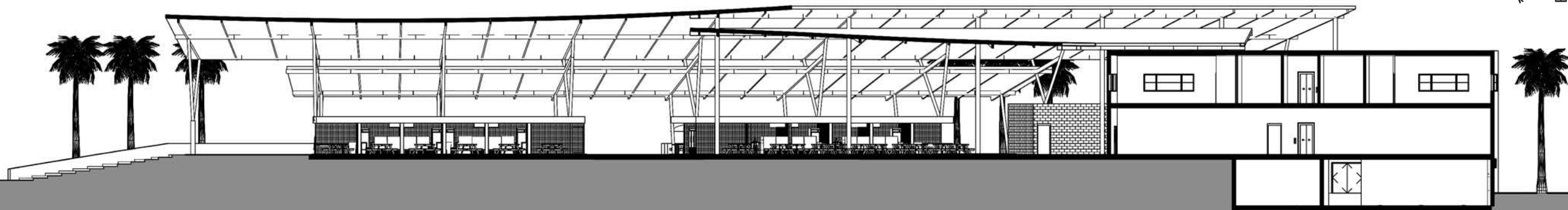
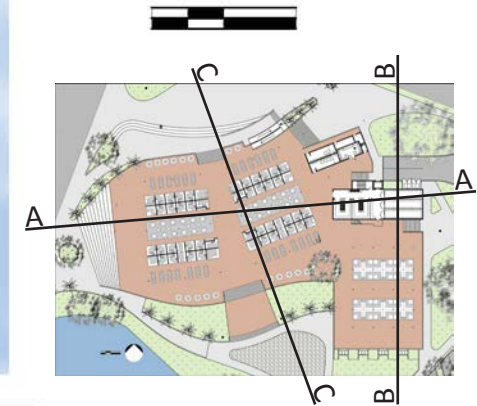
**East Elevation**



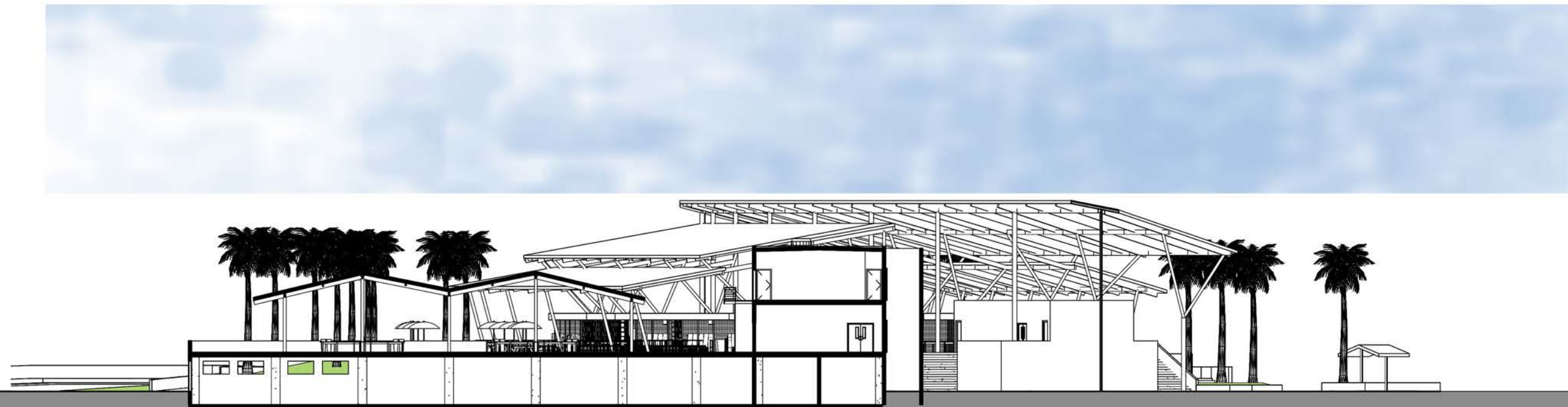
**West Elevation**



# Ala Wai Community Hawker Centre Sections

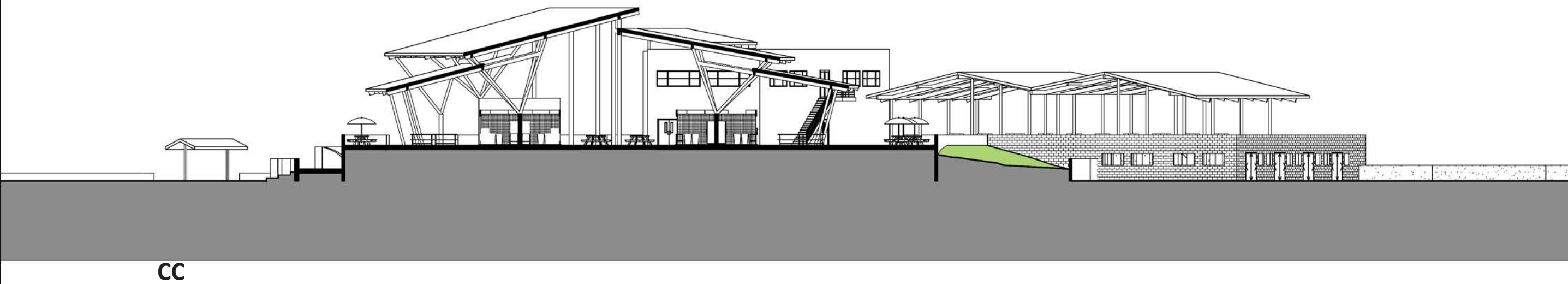


AA



BB

Pu'u'ohulu Community Hawker Centre  
Sections





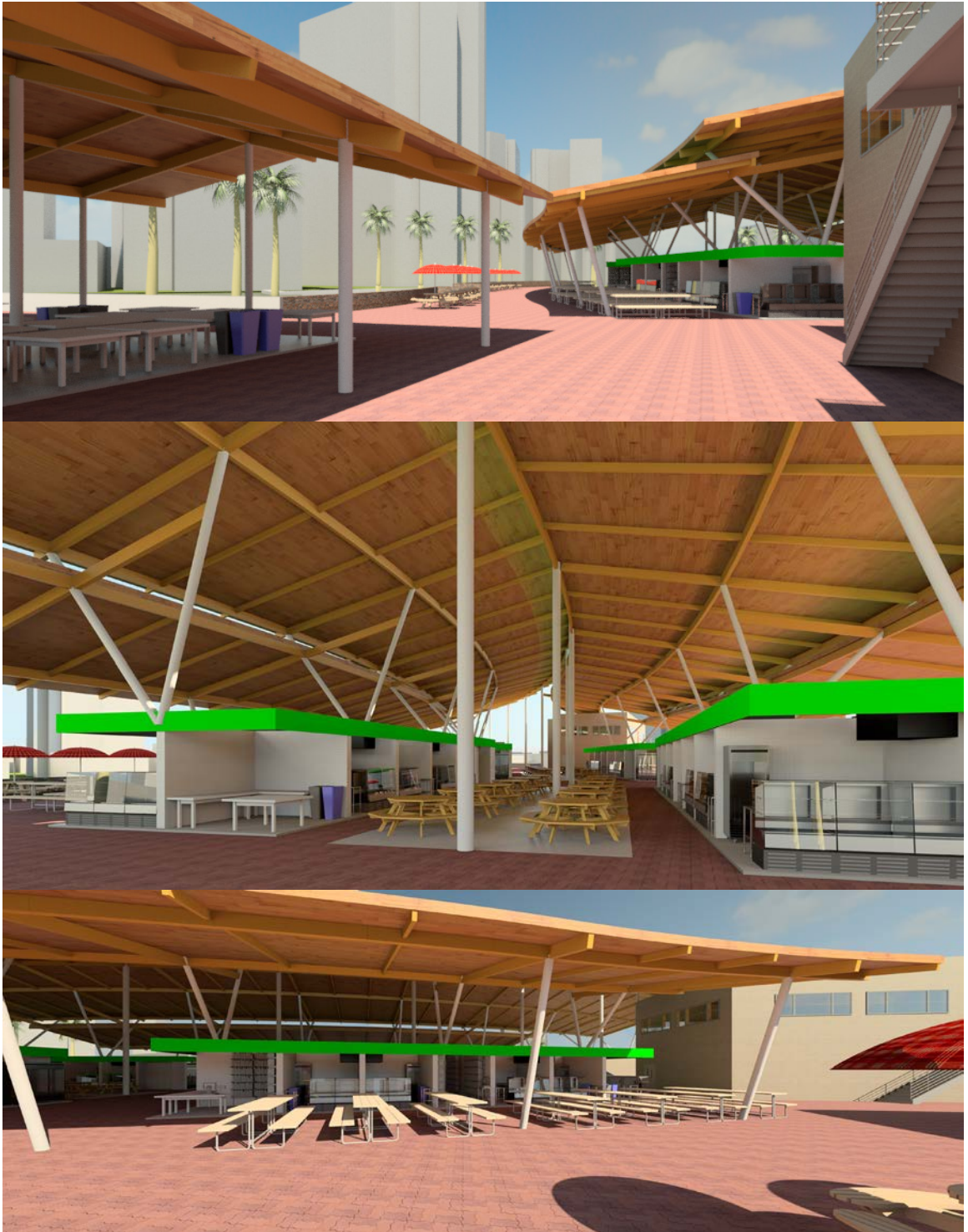


Aerial Perspectives from nearby Buildings

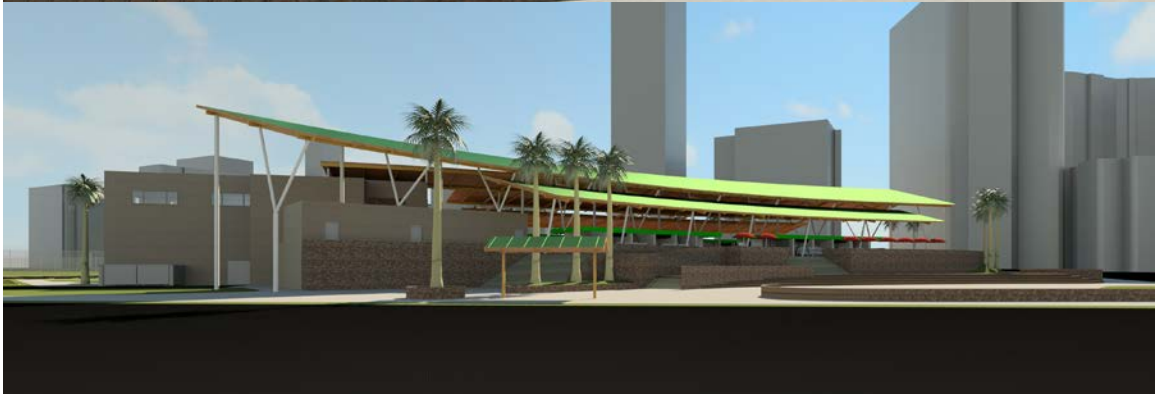


Entry from Ala Wai Park and Waikiki





Inside the Centre



Entry from Mo'ili'ili

### **4.3 Pu‘u‘ohulu Centre**

#### **Pu‘u‘ohulu Community Hawker Centre**

##### **4.3.1 Design Opportunities**

A number of opportunities for this site have been identified in the site analysis for Ma‘ili. The following analysis lists some strong opportunities that the future hawker centre may utilize in its design and function.

##### **Centrally Located Park and Sports Facilities:**

The park is centrally located in the midst of a relatively new community, with other communities radiating from the intersection of Kaukama Road and Pakeke Street. Already present on the site are basketball courts, volleyball courts and a baseball field, as well as a makeshift football goal which should be kept and reinforced with the development of the hawker centre on the park grounds. The addition of other physically motivated activities could include jogging/walking paths, play areas and congregation spaces for spectators and community events. Currently the field is in need of repair concerning grass cover and vegetation. All attempts to make the park more hospitable and responsive to nature should be utilized. Community circulation patterns, noted by the presence of fresh shoe tracks and the creation of a dirt path through the grass, tend to cut across the park to reach the nearby shops. The centre should be mindful of the circulation

patterns through the site and consider points of entry from within as equally or more important than from Kaukama Road.

### **Town Center and Services:**

The Shops at Sea Country are located across the street from the park at the intersection of Pakeke Street and Kaukama Road. There are five shops with front and back storefronts. As of January 2016, a general store and beauty salon were the only two tenets with three restaurant spaces being outfitted with equipment and interiors. A community pool and clubhouse neighbor the shopping center and regularly participate in events and activities. Adjacent to the park is an early childhood development and day care center with programs in partnership with the Department of Education aimed at head-start and child care for teen parents. These amenities have built a strong town center atmosphere separate from the more distant commercial center in Maili and Waianae proper. The creation of these businesses reinforce community walkability and consciousness. Building on this town center model, the hawker would not only benefit from the relative closeness to already successful businesses and destinations, but increased visitation to the hawker centre would be reciprocally beneficial to the surrounding businesses. The gathering spaces afforded to the community could be utilized by said businesses in addition to the hawkers, where collaboration and reinforcement of each program could be capitalized.

### **Arable Land:**



Lualualei Valley is home to a variety of agricultural producers. Local crops, livestock and seafood is regularly harvested and sold in markets throughout the island. Without the agency to grow and harvest crops on fertile agricultural land, a community garden space would enhance the food security of families in the area, educate people on the benefits of growing local healthy foods and have the potential to start a number of programs aimed at reinforcing community resilience and co-operation. Food-swap/shares could be setup to diversify diets, small-scale farmers could participate in co-operatives for profit and the creation of chef's gardens could allow the local hawkers an alternative to pre-processed or imported foodstuffs. With the existing sports and recreation facilities, there is ample land to incorporate a fairly large community garden including individual, community, educational plots and small-scale orchards. Incorporating community gardens into the hawker programming for larger sites within and outside the city center could potentially build a network of small farmers that hawkers may eventually source from. Perhaps in the appropriation of stalls, specific market stall may be reserved for community use and community spaces be utilized as processing centers for the produce collected before and after being dispersed.

#### **4.3.2 Design Intent**

*Pu‘u‘ohulu Community Hawker Centre anchors the the surrounding neighborhood to an active living that builds lasting bonds to people and place.*

The Pu‘u‘ohulu Community Hawker Centre harkens back to a time when cooking was a communal activity. It brings the kitchens and cooks hidden inside each home and provides to the neighborhood a place where families meet to dine together. The centre harbours safe places for children to play and return to when parents are away for work. Families and communities are reinforced as the re-establishment of a social community reminiscent of years yore. Return to a suburban context and local producers and small scale farmers gain a new market in which to sell their produce. Jobs develop out of the construction of the centre and continue through the hiring of community members as operators and entrepreneurs, especially those disadvantaged persons lacking the necessary support systems to afford them their own capabilities to begin a new restaurant venture. An epicenter is created and works to define the diverse make-up of the Pu‘u‘ohulu and Sea Country community at large.

The centre brings together humble responses to environmental conditions and local resources. Working to eliminate invasive species and provide a staging ground for agricultural practice and education, the building integrates and encourages the use of natural resources. The opportunity to utilize invasive species such as kiawe trees to make cladding material and finishes not only serves the purpose of finishing the building, but also controlling the species locally. As the site becomes further integrated into the fabric of the community, the centre can evolve and acomodate the voice of the public as it

builds political agency and provides a point for politicians to consolidate their constituents and speak with the people. Being a new construction, this centre aims to create a precedent for future hawker centres as they spread across the Waianae Coast and other suburban and rural landscapes in under utilized spaces.

### 4.3.3 Adjacency Diagraming

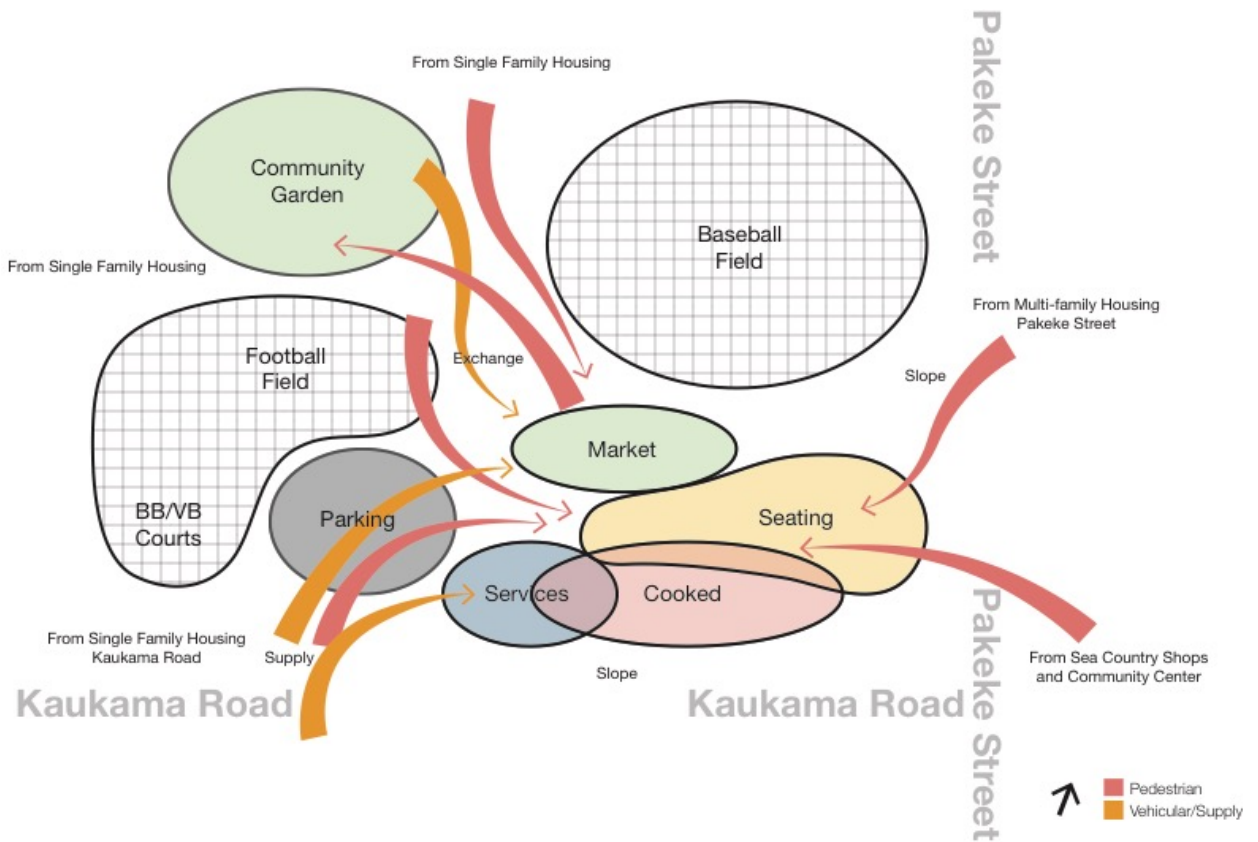


Figure 91: Pu'u'ohulu Community Hawker Centre Adjacency Diagram

Unlike the Ala Wai Community Hawker Centre, the suburban/rural atmosphere of the Pu'u'ohulu site allows for flexible programming which blends into the landscape in a manner many of the urban centres may not. This is due in part because of the size of the site, but also the degree of intimacy between groups of people and activities that may occur in a less dense community. Along the edge of the park and closest to the main points of access and other community resources, the cooked food programming has been placed to maintain a consistent and uninterrupted circulation throughout the site. Placement furthest away from the batting area on the nearby baseball field ensures its protection from run-away balls. Ample street parking has allowed the on-site parking to

be minimized and placed so as to link the existing basketball and volleyball courts and the proposed centre and ensuring most pedestrians won't be faced with having to cross a parking lot to get to the services.

The public seating area separates the market stalls from the cooked food. Although the Ala Wai Community Hawker Centre proposal separates these two programs significantly, the opportunity to utilize the canopy structure as a multipurpose gathering space when stalls are not in use is valuable to the larger context of the community. Gathering spaces for families and the exchange of resources is highly encouraged and reinforced by connecting the programs visually to the surrounding sports facilities, physically to a community garden and surrounding community, and culturally by supporting education and exchange of food practices from a diverse multi-ethnic community.

#### **4.3.4 Final Design**

The following pages document in detail the proposed Pu‘u‘ohulu Community Hawker Centre for Ma‘ili Mauka. Incorporating the recommended programs described by the preceding research, the centre develops a strong community center with neighboring businesses and ensures the longevity and utilization of the Pu‘u‘ohulu Community Park. The clientele and conditions provided to this site is different than the Ala Wai Centre discussed earlier, notably the site’s size, agricultural production and large Native Hawaiian population. Catering to a much lower density, the centre is substantially smaller than the model developed by Singapore and subsequently the model proposed for Mo‘ili‘ili in the previous discussion. In total the centre provides 18 stalls adhering to the ratio of programming previously recommended, yet modified as to reflect the needs of the community.<sup>352</sup> An emphasis has been placed on park interconnectivity and creating a refuge for members of the community who wish to relax and socialize on hot cloudless days.

#### **Quick Information:**

Number of Floors	2	
Total Protected or Enclosed Area	17,482 ft <sup>2</sup>	1,624 m <sup>2</sup>
Total Rentable Floor Area	4,252 ft <sup>2</sup>	395 m <sup>2</sup>
Building Efficiency Ratio <sup>353</sup>	28.1% BoH	71.9% FoH
Total Hawker Stalls	18 stalls	
Cooked Food	8 stalls	44.4%
Market	8 stalls	44.4%
Sundry	0 stalls	0%
Drinks	2 stalls	11.2%

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<sup>352</sup> Page \*\*:42% Cooked Food, 40% Market, 18% Sundries

<sup>353</sup> For the purposes of this study this will be a measure of rentable space versus public and non-rentable space (park offices, restrooms, seating areas)

Back of House (BoH): all cooking, storage, preparation, and rentable space

Front of House (FoH): all public **and** non-rentable space

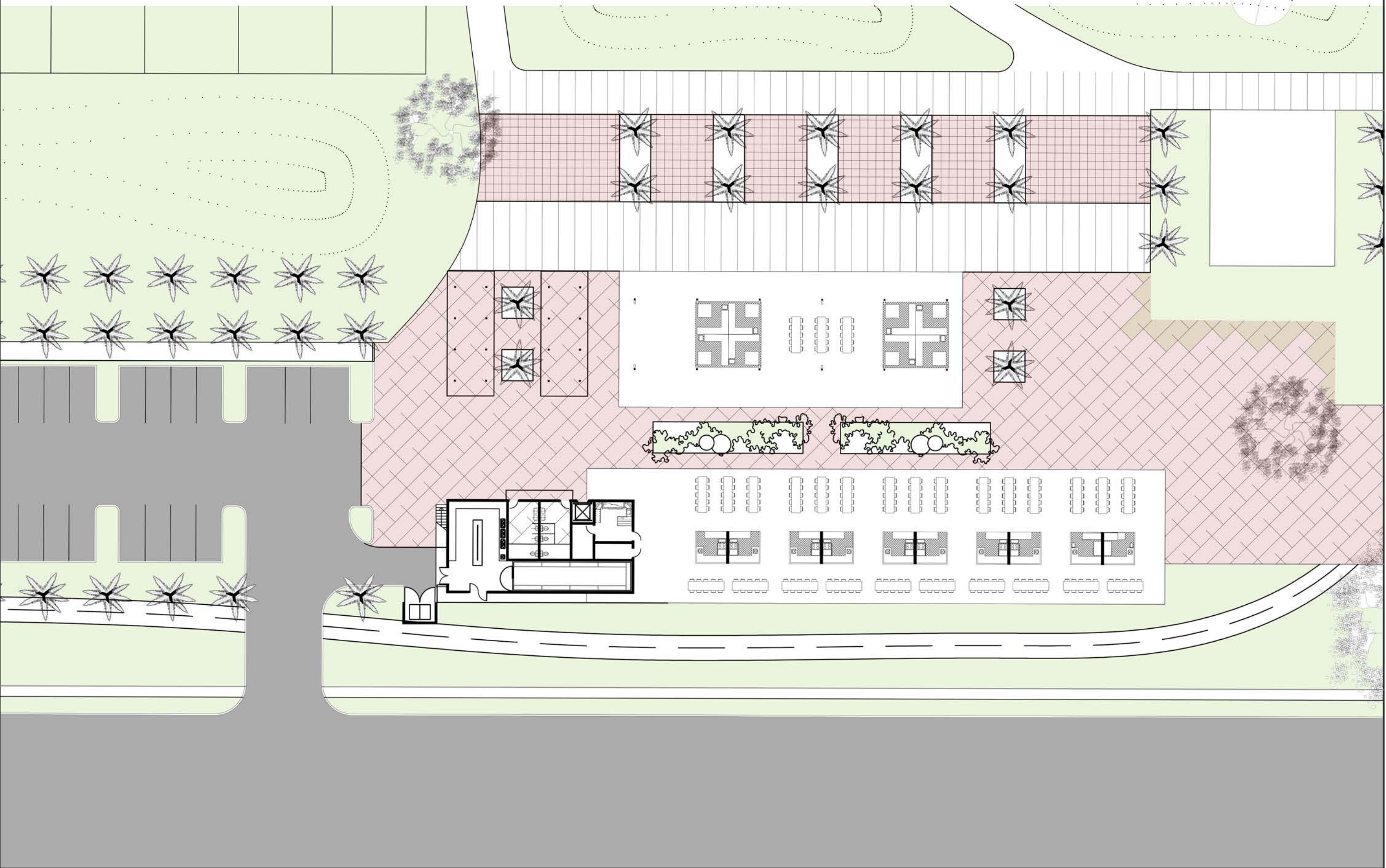


Pū'ohulu Community Park  
Master Plan



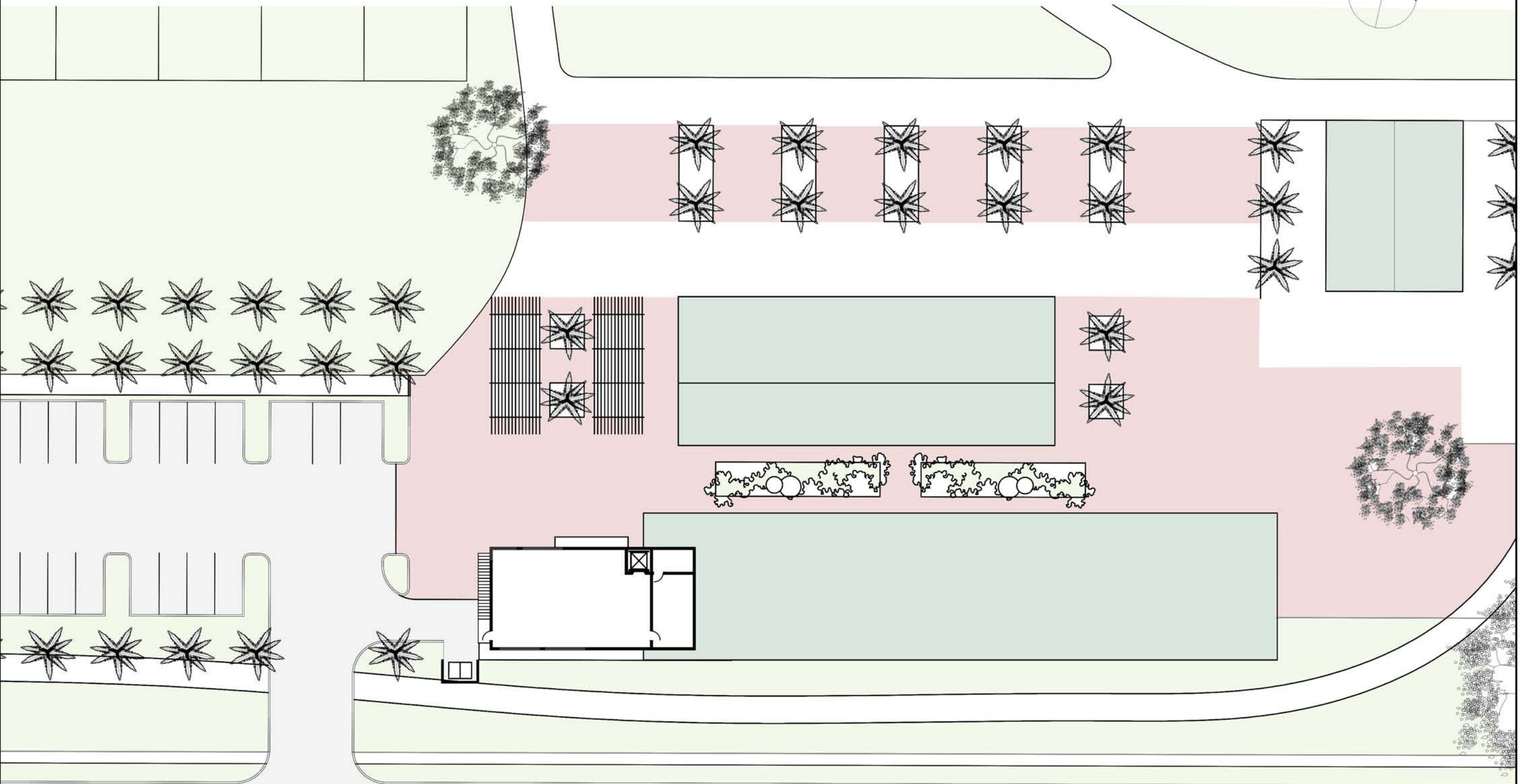
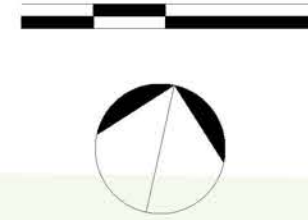


Pu'u'ohulu Community Hawker Centre  
Ground Floor

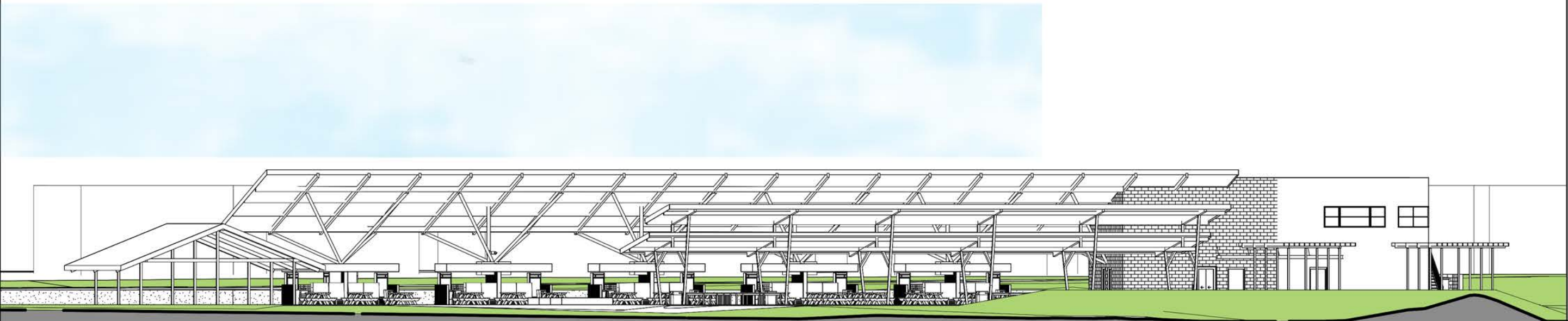




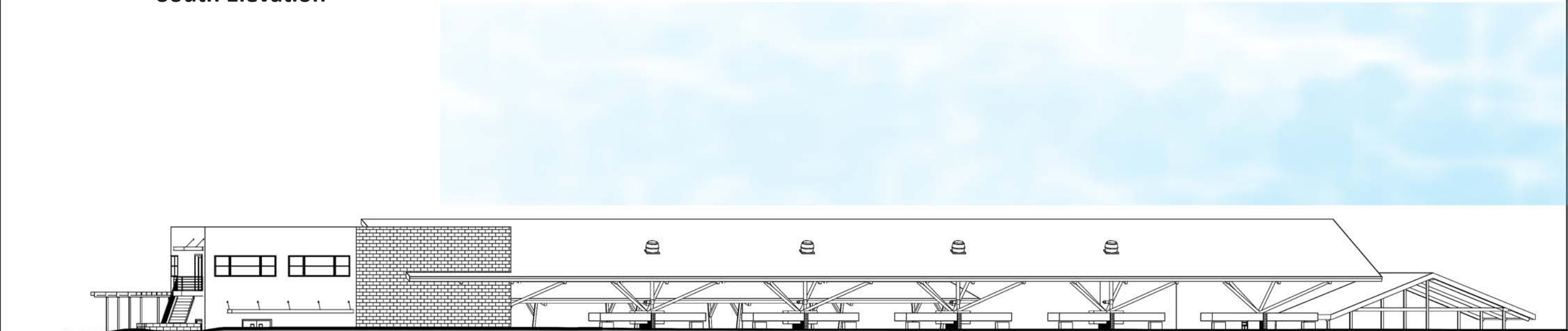
Pu'u'ohulu Community Hawker Centre  
Second Floor



Pu'u'ohulu Community Hawker Centre  
Elevations

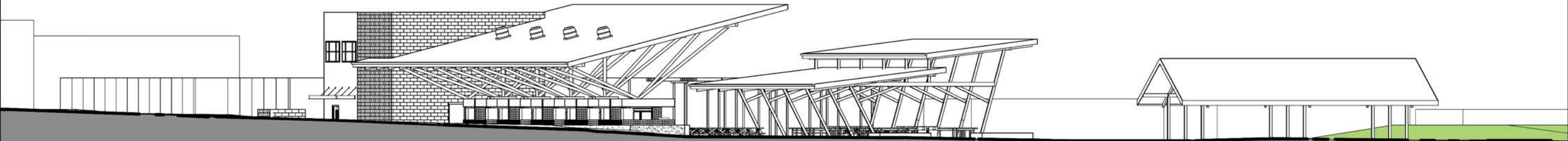


South Elevation

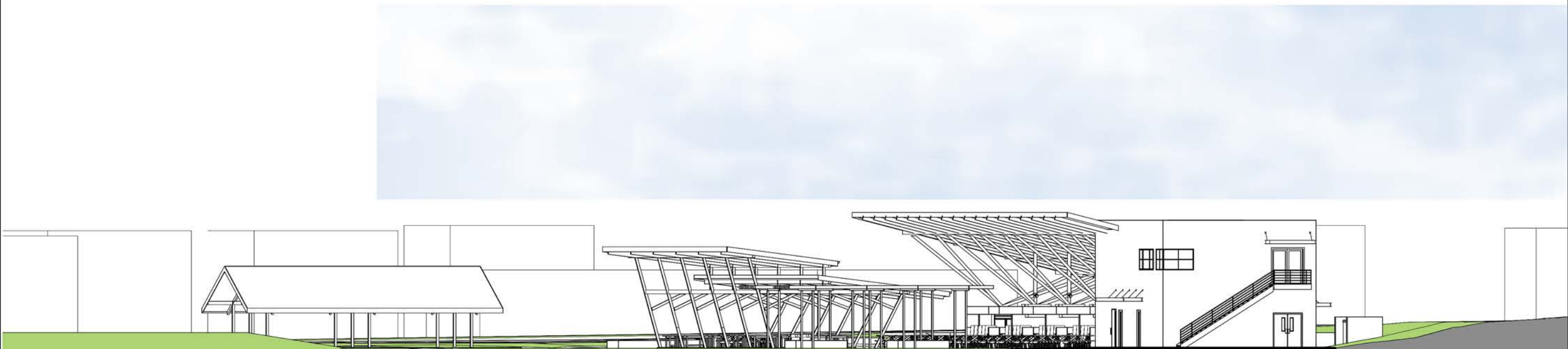


North Elevation

**Pu'u'ohulu Community Hawker Centre  
Elevations**



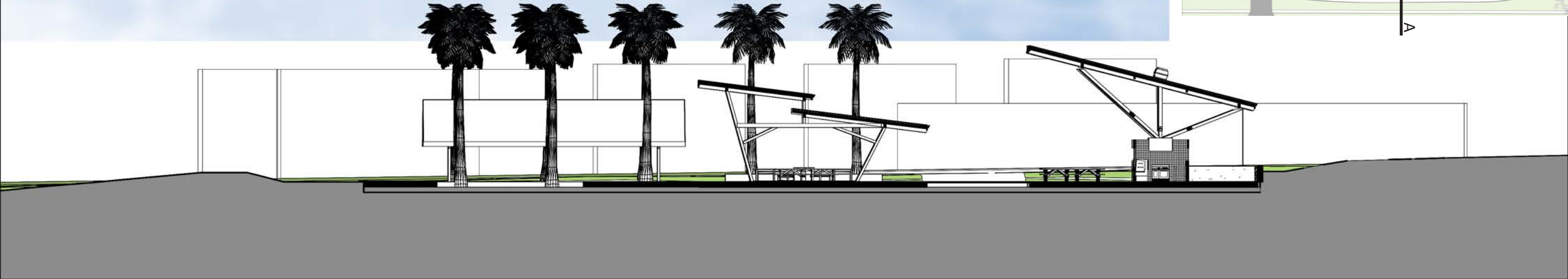
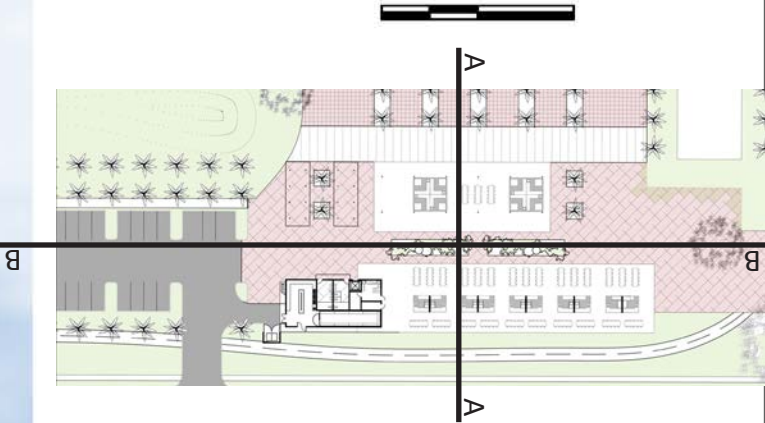
**East Elevation**



**West Elevation**



Pu'u'ohulu Community Hawker Centre  
Sections



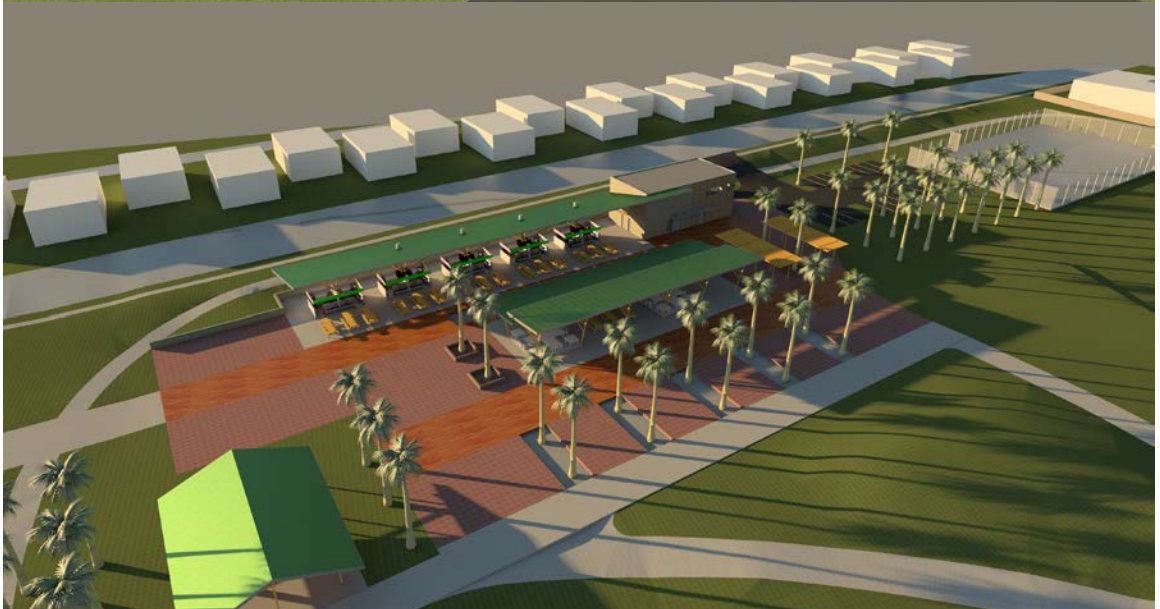
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## 5 | Discussion and Analysis of the Hawaiian Hawker Centre

The proposed designs address two main themes I sought to pursue as objectives in the totality of this project. The research presented prior to the design identified facets of the issues to be discussed, while the design exemplifies an applicable approach to help mitigate and reinforce various aspects of the issues presented. The following pages will discuss the methods in which the issue of Community Resilience and Food Equity are addressed in the design of a Hawaiian hawker centre typology.

### 5.1 Community Resilience

The term *community resilience* has of late gone the way of the term *sustainability*, becoming a trigger word for anything that supports any endeavor by an architect or individual that somehow claims community integration and involvement. In fact, community resilience (CR) has a much more practical and directed definition than what many people try to pass it off as. Perhaps the best definition for community resilience is provided by the Community and Regional Resilience Institute as, “the ability to anticipate risk, limit impact, and bounce back rapidly through survival, adaptability, evolution, and growth in the face of turbulent change.”<sup>354</sup> Within community resilience are even more specialized typologies such as the Department of Health and Human Services’ Community Health Resilience (CHR)<sup>355</sup> programs aimed at creating healthy populations free of preventable chronic diseases, the Society for Military Engineers’

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<sup>354</sup> "What Is Community Resilience?" Community and Regional Resilience Institute (CARRI). Accessed March 23, 2016. <http://www.resilientus.org/about-us/what-is-community-resilience/>.

<sup>355</sup> "Community Resilience." Public Health Emergency. June 9, 2015. Accessed March 23, 2016. <http://www.phe.gov/Preparedness/planning/abc/Pages/community-resilience.aspx>.

Infrastructure Security Partnership (TISP)<sup>356</sup> to reinforce and protect existing infrastructure from disaster, the Department of Homeland Security's crime prevention methods with the Immigration Enforcement and Customs (ICE)<sup>357</sup> investigators and Federal Environmental Management Agency (FEMA)<sup>358</sup> for disaster preparedness and response. The hawker and the hawker centre creates resiliency by creating new jobs, ensuring access to healthy environments and features, establishing safe environments with less crime and greater individual protections and creating new social centers that promote the longevity of the community and its micro-culture. It is my belief that the programming and design of the two prototypes provided begin to address and promote protective factors that address the previously listed features.

### **5.1.1 Jobs**

The hawker centres proposed in this research are unique in that they provide **local** jobs. The vast majority job placement programs work with established companies to reintegrate people in to the workforce, but hawkers are entrepreneurial endeavors that nurture and assist individuals that may not have the necessary capital or resources needed to enter into the larger food industry. If adopted state-wide at a density ratio of 1 hawker to every 372 persons, there would be a total of 3,817 jobs generated by the hawkers themselves. At least 1,603 of these are chefs from the immediate neighborhood. These jobs are geared towards attracting persons not traditional in the industry, that is the home cook who never thought to open a small restaurant, the housewife/dad who would like to

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<sup>356</sup> "Mission." TISP Council (SAME). Accessed March 23, 2016. <http://www.tisp.org/>.

<sup>357</sup> "What We Do." U.S. Immigrations Enforcement and Customs. Accessed March 23, 2016. <https://www.ice.gov/overview>.

<sup>358</sup> "Protecting Our Communities." FEMA. February 24, 2016. Accessed March 23, 2016. <http://www.fema.gov/protecting-our-communities>.

add to the household's security, the business person who wants to try something new, 1<sup>st</sup> generation immigrants and many more. With many of these stalls, there is also the potential for the hawker to hire a single helper. If 50% of the cooked food stalls did this, there would be a total of 2,404 jobs added to the market for the cooked food stalls alone.

Somewhat differing from the cooked food stalls, the market stalls can be operated by local farmers and groups of farmers much like a farmers' market. Current markets could potentially relocate to these new sites if permitted. Due to the lack of farmland in urban Honolulu, it would be expected that these stalls would be manned by persons representing the farmers who live nearer to their land. If only 50% of these stalls are manned full-time then another 763 jobs are created with the potential for 763 more jobs being part-time. With sundries stalls accounting for 18% of the total hawker stalls, an additional 688 jobs are created for miscellaneous items. In all, the initial assessment of jobs added to the local economy equates to 3,054 full-time positions (minimum of 1,603 small business owners) and 1,564 part-time positions for the hawker stalls themselves.

The maintenance and security of the building would also add more jobs on a case by case situation. Dishwashers, caretakers, building managers and security personnel would be hired to run most of the back of house operations of the centres. For smaller centres like the Pu'u'ohulu Community Hawker Centre, the hawkers may only need three contracted dishwashers to service the center with coverage throughout the week. In contrast, the larger Ala Wai Community Hawker Centre would need 10-12 dishwashers to maintain coverage throughout the week. A similar situation could be applied to security personnel

and caretakers. The metrics for these jobs would be highly dependent on the number and size of centres.

Not only are jobs solely created at the hawker centre level, but significant economic stimulation by the increased demand for services which service the food industry would also add jobs to the local economy. For instance, the increased need for waste pickup would cause the waste management company to hire more positions. Similarly, jobs would be created out of the construction of the centres with simple components being easier to construct by with various levels of skillsets. In all, the addition of jobs to the community would help invigorate the economy and maintain the successes made since the last economic upset. When an upset does occur, the centre could be used as a resource to help individuals and families in hardship. The additional revenue created from the added business transactions would also benefit the state through its taxation of goods and sales-tax.

### **5.1.2 Health**

The Hawker centres promote health in a number of ways which may vary from centre to centre. However, in the proposed designs health is promoted by activating underutilized park spaces and incorporating new programming to better encourage physical activity to aid in the prevention of various chronic and acute illnesses. Being the larger of the two sites, more opportunity to develop the physical activity programming is afforded to the Pu‘u‘ohulu Community Hawker Centre than is to its urban counterpart. The centre provides a platform for watching sports activities such as baseball, football, soccer and



basket/volleyball. Lack of facilities for by-standers discourages many people from venturing out into the hot open field of the parks or lead to people moving their vehicles onto the grass to get a better view from the comforts of their airconditioning, at the expense of damage to the grounds and potentially dangerous encounters with park users. A quarter-mile walking/bike path intersects the hawker center and encourages families to walk around the park when visiting the center before or after family meals. Community-centered programming also encourages community locals to walk to the centres rather than drive, with most neighborhoods being within a half-mile (7 minute) walk towards the centre. In addition, the integration of a large community garden helps to promote the nutrition and mental health of users with the prospect of being able to trade or sell their crops at the local market stalls.

Although limited in its scope due to site size and existing programming, the Ala Wai Community Hawker Centre achieves similar results. The mezzanine provided allows bystanders greater comfort when watching friends and loved ones playing baseball or soccer on the nearby fields. The centre also integrates the canoe house facilities to continue the use of the site as a staging ground for the culturally significant and widely practiced team sport. Circulation and connections to neighboring communities are streamlined in the redevelopment of the park as the centre acts as a gateway and resting stop for bikers, runners and pedestrians coming from either side of the Ala Wai Canal or along the Ala Wai Waterfront Trail. A locker-room and showers are provided for the various sports and activities that happen at the site or needed by persons such as bicyclists. A busy community garden is established further down the waterfront and

would benefit from the centre in providing them a stage for exchanging or selling their harvested crops. Similarly, the centre also encourages walking or biking to the site, as the current parking facility size is maintained after being moved away from the pedestrian sidewalk.

For all future centres, walkability and health conscious programming is vital to the sustainable development of the hawker businesses who rely on the local community for support. Someone who lives in Pearl City should not have to drive to the Ala Wai Community Hawker Centre to get a meal. With the exception of visiting particularly famous or notable stalls, that person from across the island should be able to get something similar at their local hawker. Hawker food also addresses many concerns facing hunger and lack of nutritious foods, as hawker meals are non pre-processed fast-food. They should be as nutritious and tasty as home cooked meals.

### **5.1.3 Safety**

The activation of the park spaces will aid in the social control and self-patrolling of the park and immediate community areas around it. Similar to neighborhood watches, the presence of large groups of people can discourage crime and prevent the recognition of spaces as being synonymous with crime. Areas currently recognized as proliferating crime and as being dangerous would be replaced instead with an active business and community environment that attracts all kinds of the public. Vandalism, theft and assault would be expected to be effected significantly. In addition to the community center and park being maintained at higher safety levels, the neighboring communities should expect

greater safety as more people are active along the streets and paths to and from the nearest hawker centre.

Public safety is also re-enforced as the programming of the sites attempts to remove vehicles from spaces shared by the pedestrian. This is also true for bicyclists and skateboarders as they are often found riding on tight sidewalk spaces and along high traffic corridors. The widening of sidewalks and the integration of site circulation directly onto the street paths allow for greater permeability between pedestrian and site rather than street and site. Increasing the perceived safety of the neighborhood would help to build a more resilient community against predispositions and prejudices many communities now face.

#### **5.1.4 Communal Social Centres**

Not only are the centres a platform for communal collaboration involving the hawkers in their operations, but also a platform for social interaction and discussion between various groups of society. Food and socialization is a common trait that can be found in nearly every major culture across the world. Humans are social creatures who need to socialize in one way or another to live healthy mental and physical lives. Much like a dinner table during a busy family holiday, the centre becomes an area where the elderly interact with the young, politicians speak with their constituents, communities gather for a cause and many other activities occur that promote community collaboration and socialization. A new family is built much like the families built from neighborhoods of yore, re-enforcing community pride and culture. The longevity of the communities and the traditions within

them are given a platform for expression, and in a manner most people can relate to. The differences between each community would further define it as a place that represents the area and acts as a voice for the the community as a place by the people and for the people.

Conversations between the various centres could build exchanges of ideas, education and, developing strong community centers. Collaborations between institutions and other organizations such as the Kapiolani Community College Culinary Arts Program, business training classes and cultural events could help build not only lasting relationships between key economic and political bodies in the state, but also strong community outreach and curricular programs. As such, programming in the centres are reserved as multi-use community spaces for classes, gatherings and events such as cooking lessons, art and other parties. Integrated into the centres, their utilization would also support the continued patronage of the hawkers on-site, thus building stronger bonds between the hawker and the public. Eventually, as families grow older and a new generation arises, fond memories will form of hawkers and people's favorite *sinigang* stall and so forth, re-enforcing the culinary heritage of communities and the continued use of hawkers as a vital resource in the day-to-day lives of many who live on the islands.

## **5.2 Food Equity**

In 1996 the World Food Summit hosted by the United Nations formally defined food security as “existing when all people at all times have access to sufficient, safe, nutritious

food to maintain a healthy and active life.”<sup>359</sup> Officially the concept of food security is measured by three facets: Availability, Access and Utilization.<sup>360</sup> Developed nations typically have an over abundance of food, Hawai‘i included. In light of this, food insecurity still exists in much of the population. Food insecurity exists in many rural communities across the island. These communities often have severely limited access to food although much of it is largely produced in nearby farmland. Other factors that affect **equity** proliferate across the state such as affordability, ease of access, nutrition and cultural relevance.

The hawker centre addresses the issue of affordability by providing to the consumer well-portioned meals at a relatively low cost. The consolidation of services, low rent, communal bargaining power and limited overhead caused by excessive employees/helpers keep the cost to consumers low. In a simple calculation, if you had an extra employee who gets paid \$12 an hour and the hawker can project a patronage of 6 meals per hour, \$2 from the profit of each meal has to go towards paying the employee. This \$2 is added to the projected cost of materials, labor and profit for the item, driving cost up. Limiting the physical space the hawker has limits the number of employees that the hawker can employ, keeping that aspect of their overhead low. Similarly, maximizing profit by thinning overhead in facilities and services reduced the minimum amount needed to maintain operations. To combat abuse of this system however (unfairly maintaining high prices when the overhead has been minimized by the design of the centre for purposes of ensuring affordable products) a careful review of hawker prices

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<sup>359</sup> "Food Security." World Health Organization. Accessed March 23, 2016.  
<http://www.who.int/trade/glossary/story028/en/>.

<sup>360</sup> Ibid

and practices should be practiced and maintained. One could even suggest a price cap much like that of the Peoples' Open Markets across Oahu.

Access to food can be classified in two manners: Time and Ease. Perhaps one of the largest deterrents for people to make food at home is the time required to do so. This is where you can ask the question of how is it that a single mother of two who works two jobs make time to feed her family. Many are forced to settle for the late-night quick bite to eat on the way home rather than a healthier meal cooked at home. The hawker fulfills this need in a couple of methods. Firstly, the hawkers are specialized in the few dishes listed on their menu, with much faster turn around times than if the home cook had to go to the store, buy ingredients, come home and cook the meal for dinner. The hawker in this example streamlines the process. Also, related to the concept of community resiliency and public safety, the centres should be revered as protected spaces where people and children can go without having to worry about being put into a dangerous situation. This being said, the children of the mother who works two jobs, provided they are of old enough age, may elect to go to the centre with their friends or other neighborhood people to get their meals when their mother is away. The hawker relieves the family from having to buy into less healthy food that can be harmful to developing persons and the body in the long term. Incorporating the market stalls into the centre also encourages hungry diners to pick up a few healthy vegetables and fruits before or after a meal, allowing the consumer to prepare foods at home as well. Ensuring that people have food and are able to easily and efficiently access food resources also reduces stress and ensures a healthier lifestyle.



The ease of access is also of equal or more importance when trying to decide where a family should eat. If taking a car, there has to be sufficient parking, not to mention the ease of parking and density of traffic around the establishment. Hawkers need to be placed within comfortable walking distances to local communities, encouraging greater physical activity, but also allowing the family the option to choose walking to a nearby hawker centre over driving to the area fast-food chain however many miles away. This does not call for the elimination of parking, as some patrons will continue to be insistent on driving the short distance from their home. However the reduction of use of the automobile would be greatly reduced if the walk to the hawker centre was synonymous with the ease of taking a walk to the corner store.

So far the centres have been discussed as promoting affordability and access, but how does the centre ensure the quality of food being served? The hawker business model is aimed at home cooks who know how to make their specialties well and often. Opposed to fast-food chains that are able to maintain low material costs by using low nutrient products and highly processed materials, the hawker provides a home-cooked meal, albeit at a significantly larger scale than the would be expected in one's own kitchen. This aspect of the programming does not demand that the food provided be optimized for health and nutrition as in all vegetarian and fat free foods (that would only drive the cost up as John mentioned in the interview), but the food provided would be innately more nutritious due to the use of more diverse natural healthier ingredients and absence of preservatives and other chemicals. The presence of the centre provides to the consumer

an option and alternative to less health conscious foods. Furthermore the centres' merging of the a market into the programing of the centre encourages the growth of the local food supply, allowing hawkers to utilize produce grown locally and support the community farmers they readily serve, creating a farm to fork cycle.

Lastly the hawkers serve a need that is often overlooked when somebody mentions food security. Cultural relevance is perhaps one of the strongest indicators of food equity in a community. Communities are often identified by the types of food they serve without much thought into what the real community behind the scenes is like. Symbols of gentrification and cultural oppression, intentional or not, can be blamed for the lose of one's cultural identity and ability to relate to other communities that have stronger ties to their traditions and customs. The uniqueness of the hawker, as opposed to most brick-and-mortar restaurants or chain stores, is again its employment of local home cooks and producers. Although not required, it could be expected a many number of hawkers would choose to default to cooking something that relates to their upbringing and cultural practices. More importantly, the diversity of the community would express itself in the makeup of the hawker centre tenets. This could help contradict some of the popular preconceptions about settlement patterns and generalizations people have about race and ethnicities located in specific communities. One could imagine in the Mo'ili'ili having a Micronesian food stall next to a Japanese fusion food stall next to a Korean *bibimbap* stall. The center acts as proof that a people of differnt cultures exist and provide to those people foods that are as equally relevant to them as *kimchi* is to Korean and Chinese communities without the stigmatization that what they are eating is unnatural, wierd or

gross. Even in Singapore, a common sight to see is a hawker stall that sells premium “western food.”

## 6 | Conclusion

The preceeding information has disclosed an overview of the current status of food insecurity in Hawai‘i. The research has investigated programs that address food insecurity, an alternative model developed by Singapore to tackle food insecurity, and created a proposal for the creation of a Hawaiian hawker centre in response to the model investigated. Hawai‘i and Singapore share many unique characteristics that make the adoption of a hawker centre in Honolulu much easier than implementing the program in a city such as Los Angeles or San Francisco. The Singapore model is largely funded by the state and derived out of a need to consolidate resources, thus limiting the study so that the proposed centres rely heavily on the support of state policy, planning and funding to construct and operate.

Understanding of how a private developer could implement the centre in future developments is also limited. The centres exist as long term investments and as such would probably not be of potential interest to most developers who expect an immediate return on investment. Social enterprise, policy and public funding in contrast may accept a longer return if the cost-benefit analysis proves to be in favor of community well-being. Like-wise, the economic impacts and calculations presented rely on simple approximations of variables such as hawker densities, economics and processes based upon the research of the Singaporean hawker model. More research must be made, including the production of a proper needs assessment to calculate appropriate hawker density levels, program appropriations and economic viability.

The proposed prototypes also assume development on land that is currently prohibited from being developed on, and perhaps future studies should investigate the potential for the centres to be constructed on private land or other land owned by the state or city and county that is not designated as a P-2 LUO. Through policy change this could be amended much like the recent accessory dwelling unit codes passed in the 2015 Hawai'i State Legislature, but significant lobbying and work would have to be done to get the changes passed. Also, the design and variability of the hawker stalls in regards to layout and materiality may differ substantially from what has been shown in the document. In this study, for the sake of consistency, the proposed designs standardize many of the features of the centres. Many proposed features, programming and general rules of thumb are applicable to any eventual hawker centre implementation. Future studies, should delve deeper into the island-wide master planning of a hawker centre system and how it can better adapt to the demand of local food sourcing, tackling disparities and positively effecting community level health outcomes in greater detail.

Although the proposed model highlights various aspects of community engagement and participation, a proper study into the needs of the communities and how they would like to interact with the centres needs to be completed before a design proposal may move towards eventual construction and utilization. The Pu'u'ohulu Community Hawker Centre and Ala Wai Community Park Hawker Centre prototypes have been designed with well established evidence supporting the programs' purpose and benefits, providing future developments a strong platform to begin community and policy level discussions for the implementation of a Hawaiian hawker centre system. This study has been

effective in identifying communities with the potential to develop strong community centers that correspond with existing circulation patterns and economic development. The bolstering of these locations has shown to have strong implications internally for the site, with the potential to encourage growth around it as well.

The degree of activity near the proposed hawker centres induce recollections of town centers and neighborhood hang-outs of a time past. In a not so distant past, it was common for the family to go to the neighborhood grocery to collect fresh meat and produce for the next evening or two. The community knew their butcher, grocer, and fishmongerer who in turn knew the community, but today we pick our meat from shelves that separate these very people and their work from public eye and interaction. We instead go to the grocery store once a month in our cars and fill our pantries with processed food made to last long periods of time on shelves. The intimate relationships that developed where communities and populations collided have been lost to disgruntled persons lugging overcrowded grocery carts around vast stores that are too cold to think in. When did we turn our back to natural instincts and move away from sources of food that we have fought to cultivate since the dawn of the human species? It is my hope that this document provides guidance to architects, planners, food producers, politicians and interested community members who seek to develop an inward-looking alternative method for creating a healthier food landscape for the people of Hawai'i and beyond.





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